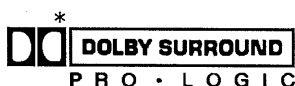


Service Manual

AV Control Stereo Receiver



Receiver

SA-HT220

Simplified



Colour

(K) Black Type

Area

Suffix for Model No.	Area	Colour
(PP)	U.S.A. and Canada	(K)

Please file and use this Service Manual together with the Service Manual for Model No. SA-EX310 (P, PC) Order No. MD9703022C1

Note : This Simplified Service Manual is provided to indicate the main difference between the original Model No. SA-EX310 (P, PC) and the subsequent Model No. SA-HT220 (PP).

■ Specifications

■ FM Tuner Section

Frequency range	87.9 — 107.9 MHz
Sensitivity	11.2 dBf (2 μ V, IHF '58)
50 dB quieting Sensitivity	
MONO	18.3 dBf (4.5 μ V, IHF '58)
STEREO	38.3 dBf (45 μ V, IHF '58)
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %
S/N	
MONO	73 dB
STEREO	67 dB
Frequency response	20 Hz — 15 kHz (+1 dB, -2 dB)
Alternate channel selectivity	65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
Spurious response rejection at 98 MHz	75 dB

AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Antenna terminal(s)	75 Ω (unbalanced)

■ AM Tuner Section

Frequency range	530 — 1710 kHz
Sensitivity	20 μ V, 330 μ V/m
Selectivity	55 dB
IF rejection at 1000 kHz	50 dB

■ Video Section

Output voltage at 1 V input (unbalanced)	1 $\pm$ 0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Contents

■ Amplifier Section

Rated minimum sine wave RMS power output

40 Hz – 20 kHz both channels driven
0.8 % total harmonic distortion 70 W per channel (8Ω)

1 kHz continuous power output, both channels driven

0.05% total harmonic distortion 73 W
per channel (8Ω)

Total harmonic distortion

Rated power at 40 Hz – 20 kHz 0.8 % (8Ω)
Half power at 1 kHz 0.07 % (8Ω)

Power output at the Dolby Pro Logic operation 0.9 % at 1 kHz,

Front 2 X 70 W (8Ω)
Center 70 W (8Ω)
Surround 70 W (8Ω)

Low frequency damping factor

30 (8Ω)

Load impedance

Front 8 Ω
Center 8 Ω
surround 4 - 8 Ω

Frequency response

PHONO RIAA standard curve ± 0.8 dB
CD, TAPE, VCR, TV/DVD/DSS 10 Hz – 70 kHz, ± 3 dB

Input sensitivity

PHONO 0.4mV (3mV, IHF '66)

CD, TAPE, VCR, TV/DVD/DSS	27mV (200mV, IHF '66)
S/N (IHF A)	
PHONO	70 dB (78 dB, IHF '66)
CD, TAPE, VCR, TV/DVD/DSS	75 dB (83 dB, IHF '66)
Input impedance	
PHONO	47 kΩ
CD, TAPE, VCR, TV/DVD/DSS	22 kΩ
Tone controls	
BASS	50 Hz, +10 to -10 dB
TREBLE	20 kHz, +10 to -10 dB
Subwoofer frequency response	7 Hz – 100 Hz, ±3 dB

■ General

Power consumption	175 W (In standby condition : 2W)
Power supply	AC 120V, 60Hz
Dimensions (W x H x D)	430 x 136 x 309 mm (16 ¹⁵ / ₁₆ " x 5 ¹¹ / ₃₂ " x 12 ⁵ / ₃₂ ")
Weight	6.4 kg (14.2 lb.)

Notes :

- Specifications are subject to change without notice.
Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

■ Changes In Replacement Parts List

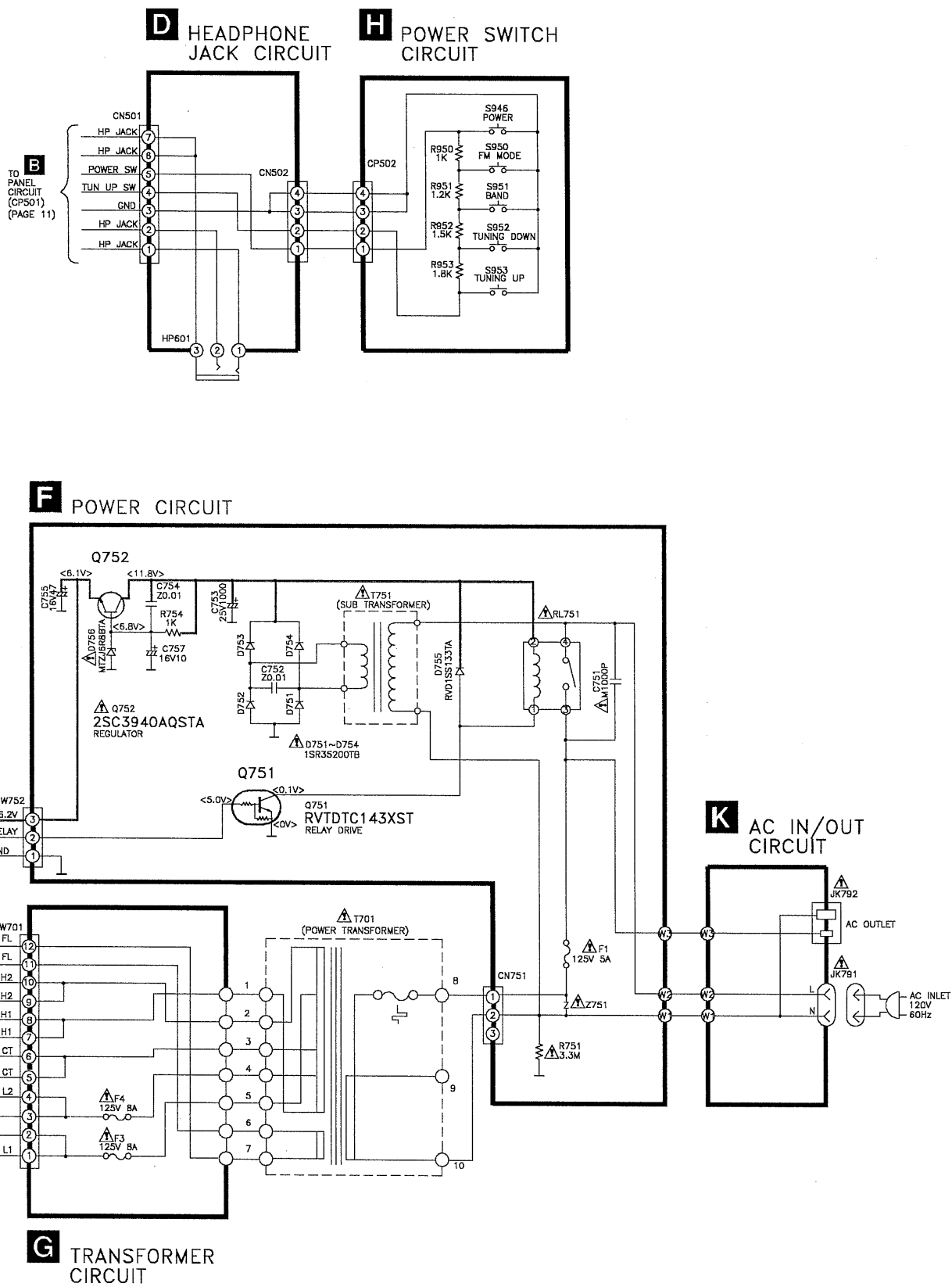
Notes: * Mentioned in this parts list is only those different from Model No. SA-EX310 (P).

* [M] Indicates in the Remarks columns indicates parts supplied by MESA.

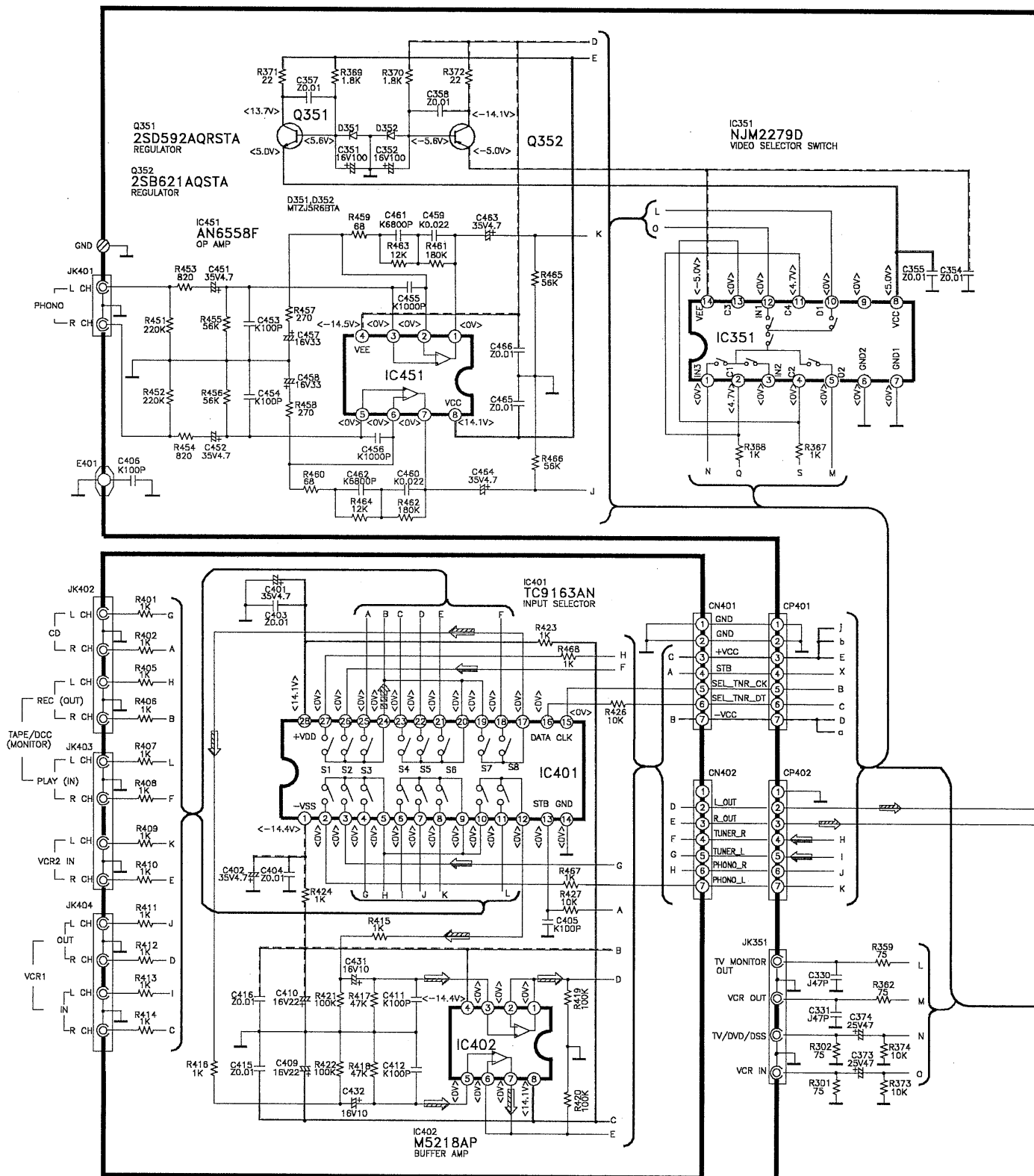
Ref. No.	Description	Change of Parts Number		Remarks
		SA-EX310P-K	➔ SA-HT220PP-K	
CABINET AND CHASSIS				
1	TOP CABINET	RKM0260C-K [M]	RKM0374A-K [M]	Changed
2	REAR PANEL (P)	RGR0251A-A [M]	RGR0251A-E [M]	Changed
7	BOTTOM CHASSIS ASS'Y	RFKJEX310PK [M]	RFKJHT210PPK [M]	Changed
11	SELECTOR BUTTON	RGU1493-K [M]	RGU1493D-K [M]	Changed
16	FRONT PANEL ASS'Y	RFKGEX310PK [M]	RFKGHT220PPK [M]	Changed
16-1	FL WINDOW	RKW0436C-Q [M]	RKW0436G-Q [M]	Changed
29	HELP BUTTON	---	RGU1398-Q [M]	Added
ACCESSORIES				
A1	REMOTE CONTROL	EUR644347 [M]	EUR646464 [M]	Changed
A1-1	REMOTE CONTROL BATTERY COVER	UR64EC1822 [M]	UR64EC1987B [M]	Changed
A4	O/I BOOK	RFKSEX310PK [M]	RQT4264-Y [M]	Changed
A4	O/I BOOK FOR REMOTE CONTROL	---	RQT4422-Y [M]	Added
TRANSISTORS				
Q106	TRANSISTOR	UN411FTA [M]	RVTDTA143XST [M]	Changed
Q705	TRANSISTOR	2SC1740SSTA [M]	2SC3311AQSTA [M]	Changed
Q936	TRANSISTOR	---	RVTDTTC114YST [M]	Added

Ref. No.	Description	Change of Parts Number		Remarks
		SA-EX310P-K	➡ SA-HT220PP-K	
INTERGRATED CIRCUITS				
IC901	IC, MICOM	M38B53M4050F [M]	M38B53M4055F [M]	Changed
DIODE				
D930	DIODE	---	SLR342DC [M]	Added
PACKING MATERIAL				
P2	PACKING CASE (GIFT BOX)	RPG3290 [M]	RPG3781 [M]	Changed
WIRES				
W701	WIRE	---	RWJ1812150CQ [M]	Added
W752	WIRE	---	RWJ1803250CQ [M]	Added
RESISTORS				
R751	3.3M 1/2W	ERC12ZGK335D [M]	ERC12UGK335D [M]	Changed
R928	120 1/4W	---	ERDS2TJ121T [M]	Added
R936	10K 1/4W	ERDS2TJ104T [M]	ERDS2TJ103T [M]	Changed
R937	10K 1/4W	ERDS2TJ104T [M]	ERDS2TJ103T [M]	Changed
R958	12K 1/4W	---	ERDS2TJ123T [M]	Added
CAPACITORS				
C117	820P 50V	ECQB1H821JF3 [M]	ECQB1H821JM3 [M]	Changed
C529	0.027 50V	ECQB1H273JF3 [M]	ECQB1H273JM3 [M]	Changed
C530	0.027 50V	ECQB1H273JF3 [M]	ECQB1H273JM3 [M]	Changed
C753	1000 50V	ECA1EM102B [M]	ECA1EM102E [M]	Changed
C1036	100P 50V	ECBT1H681KB5 [M]	ECBT1H101KB5 [M]	Changed

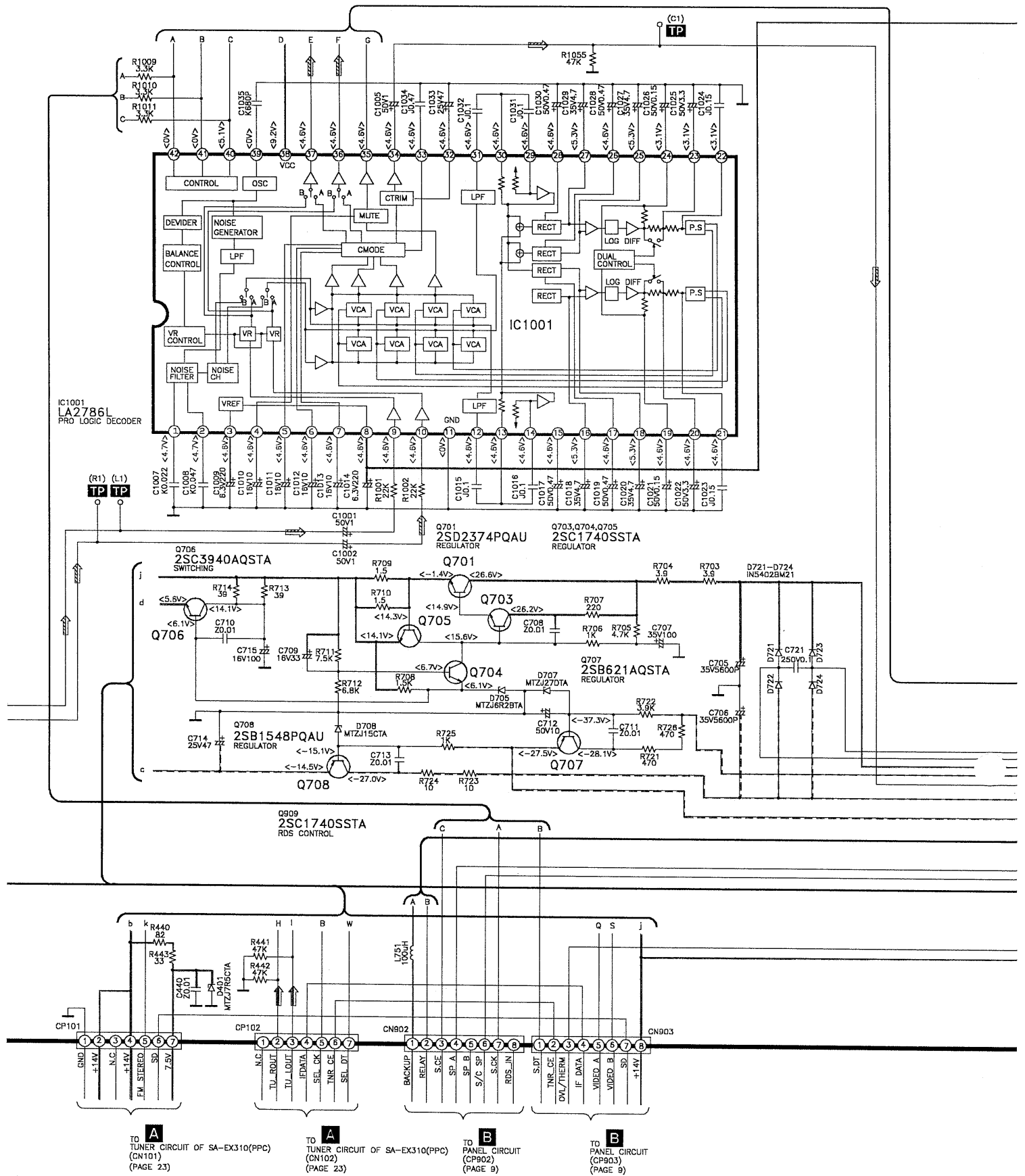
■ Schematic Diagram

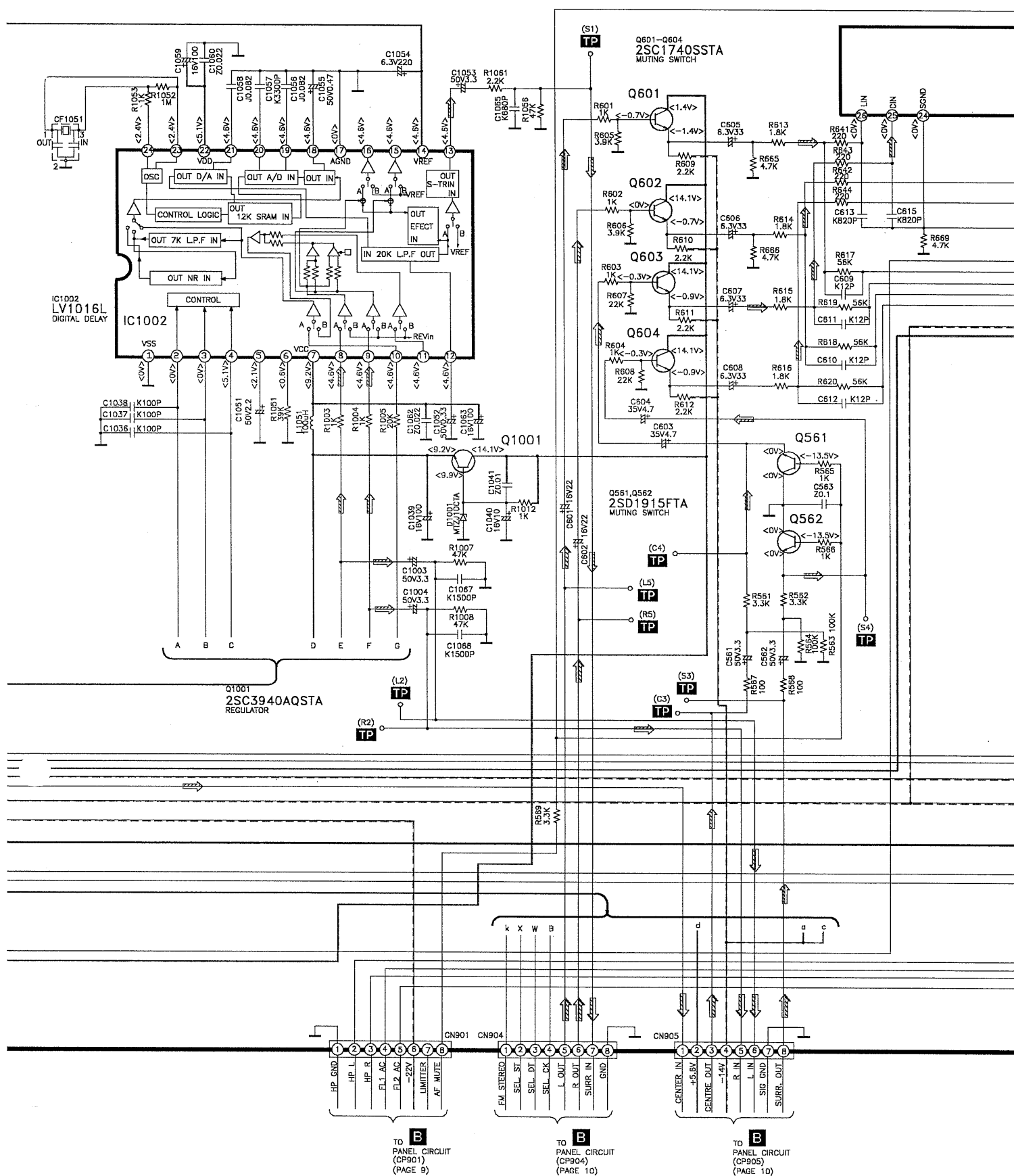


E MAIN CIRCUIT



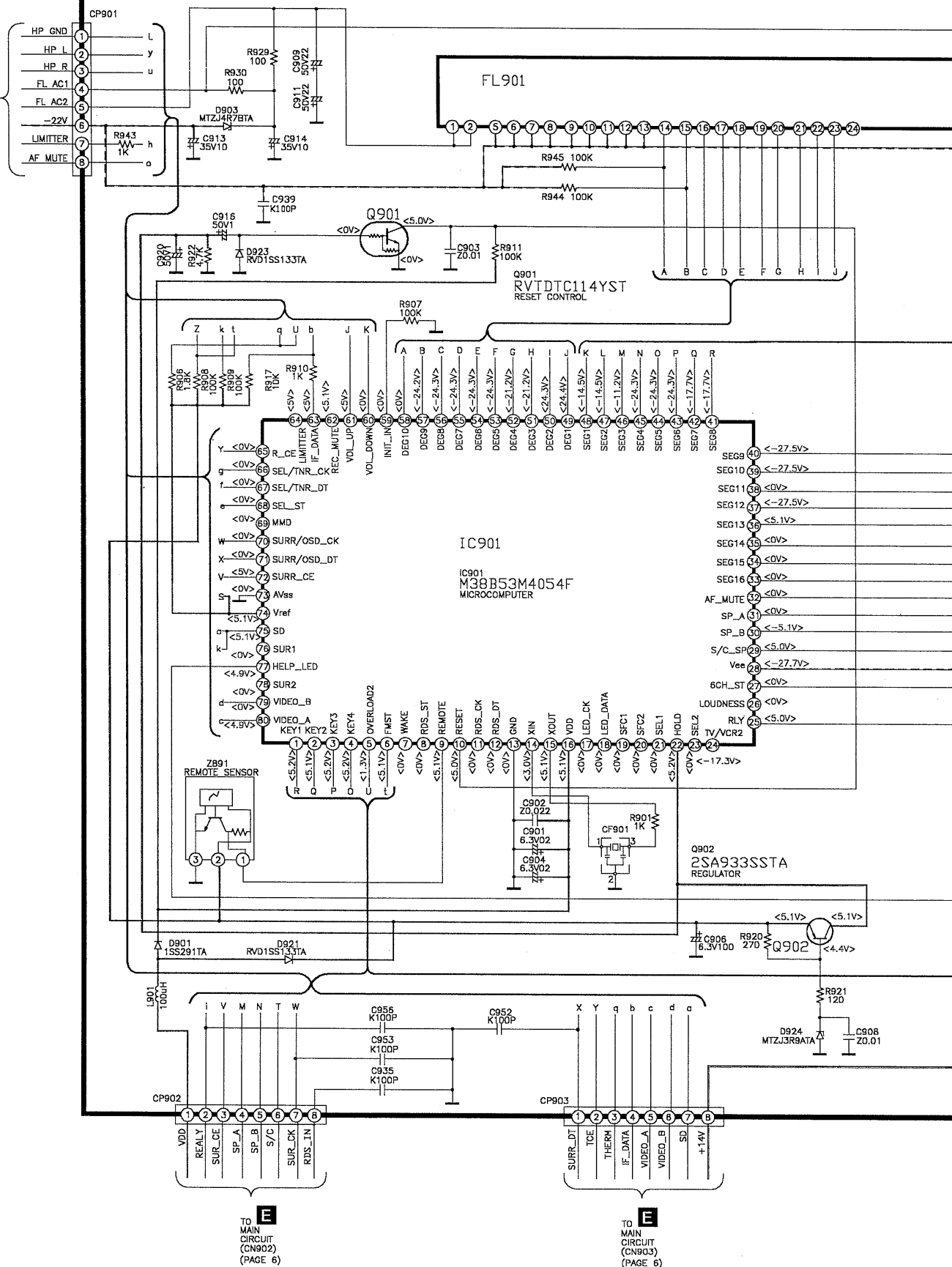
I IN/OUT TERMINAL CIRCUIT

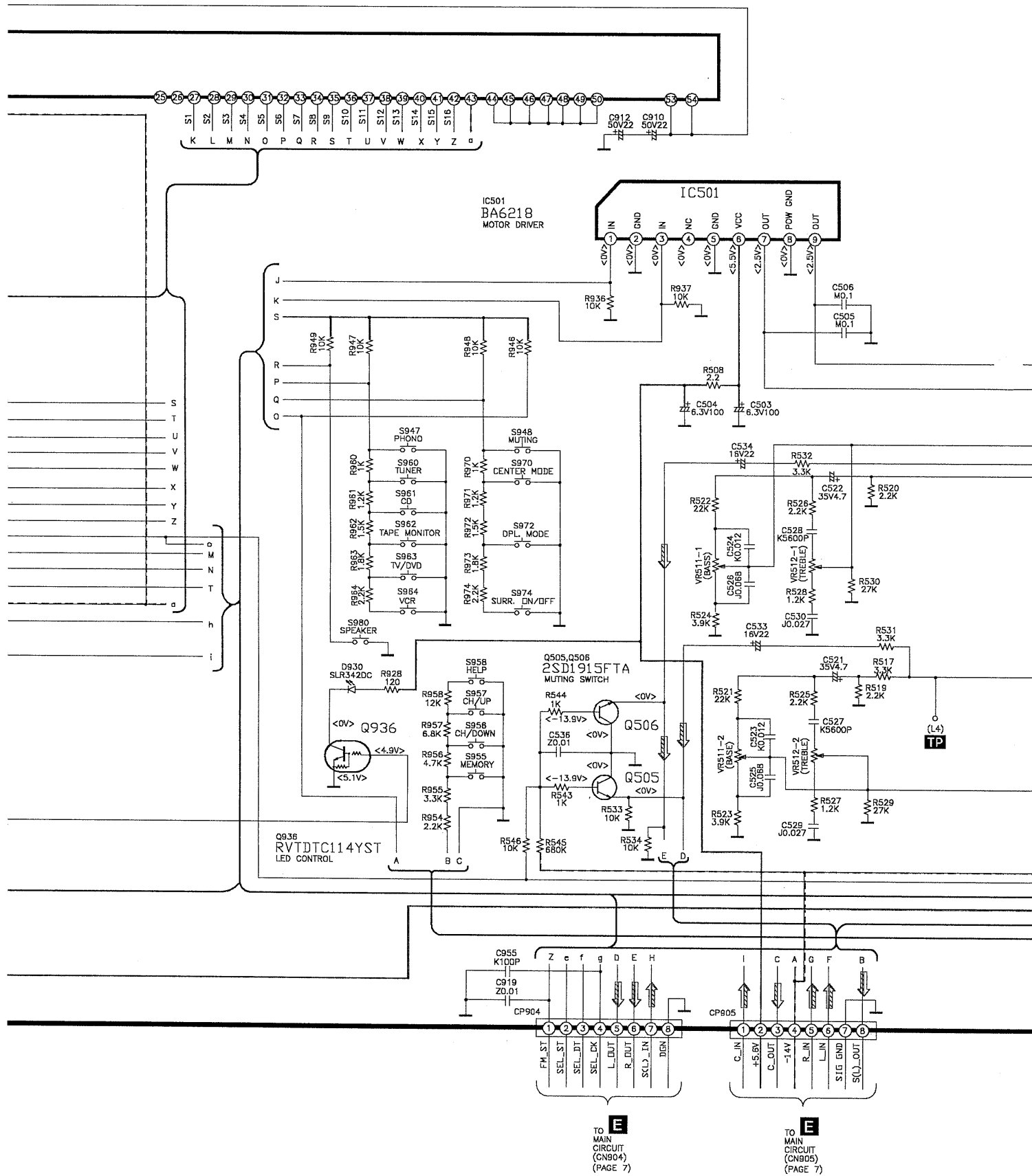




B PANEL CIRCUIT

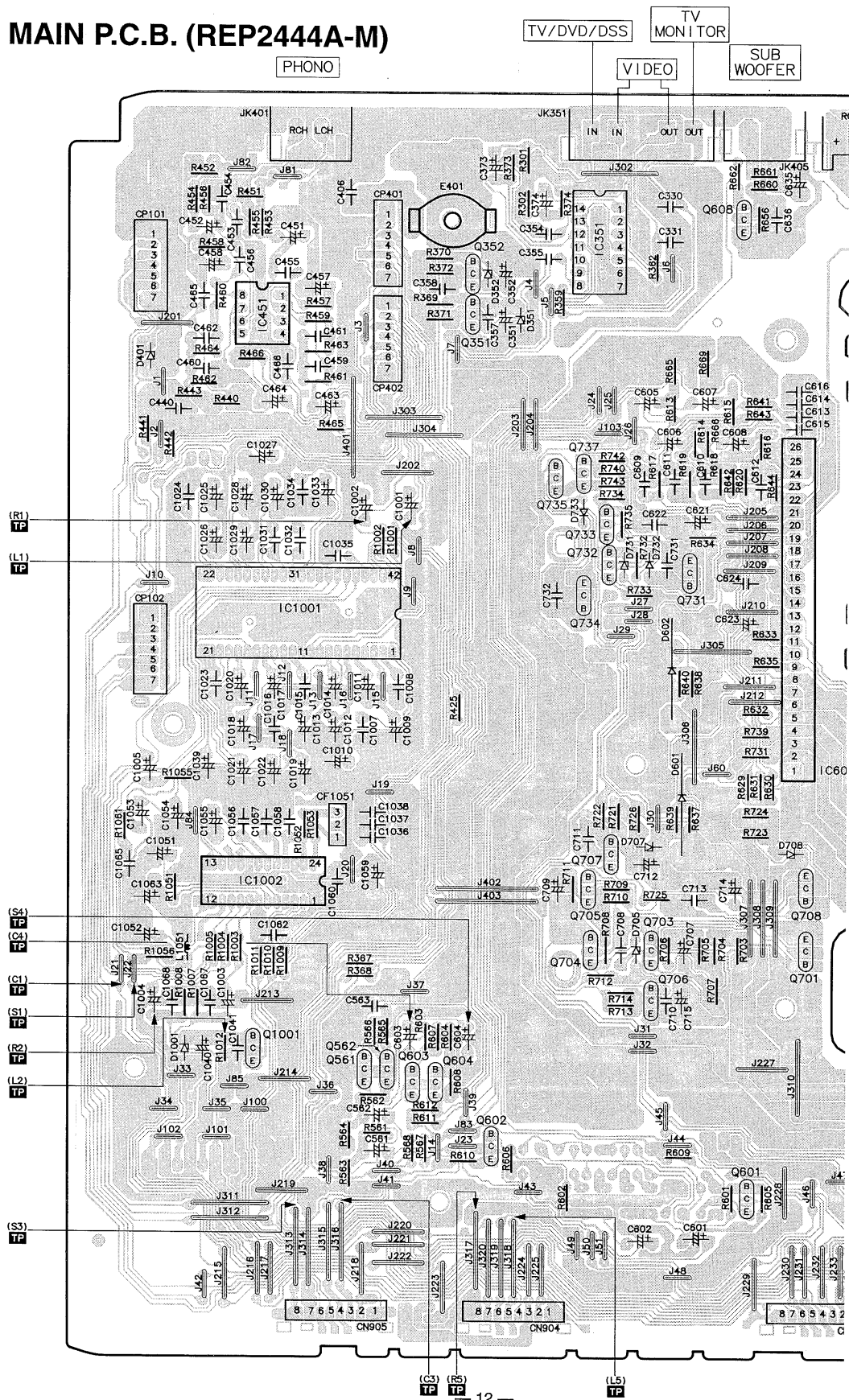
E
TO MAIN
CIRCUIT
(CN901)
(PAGE 7)

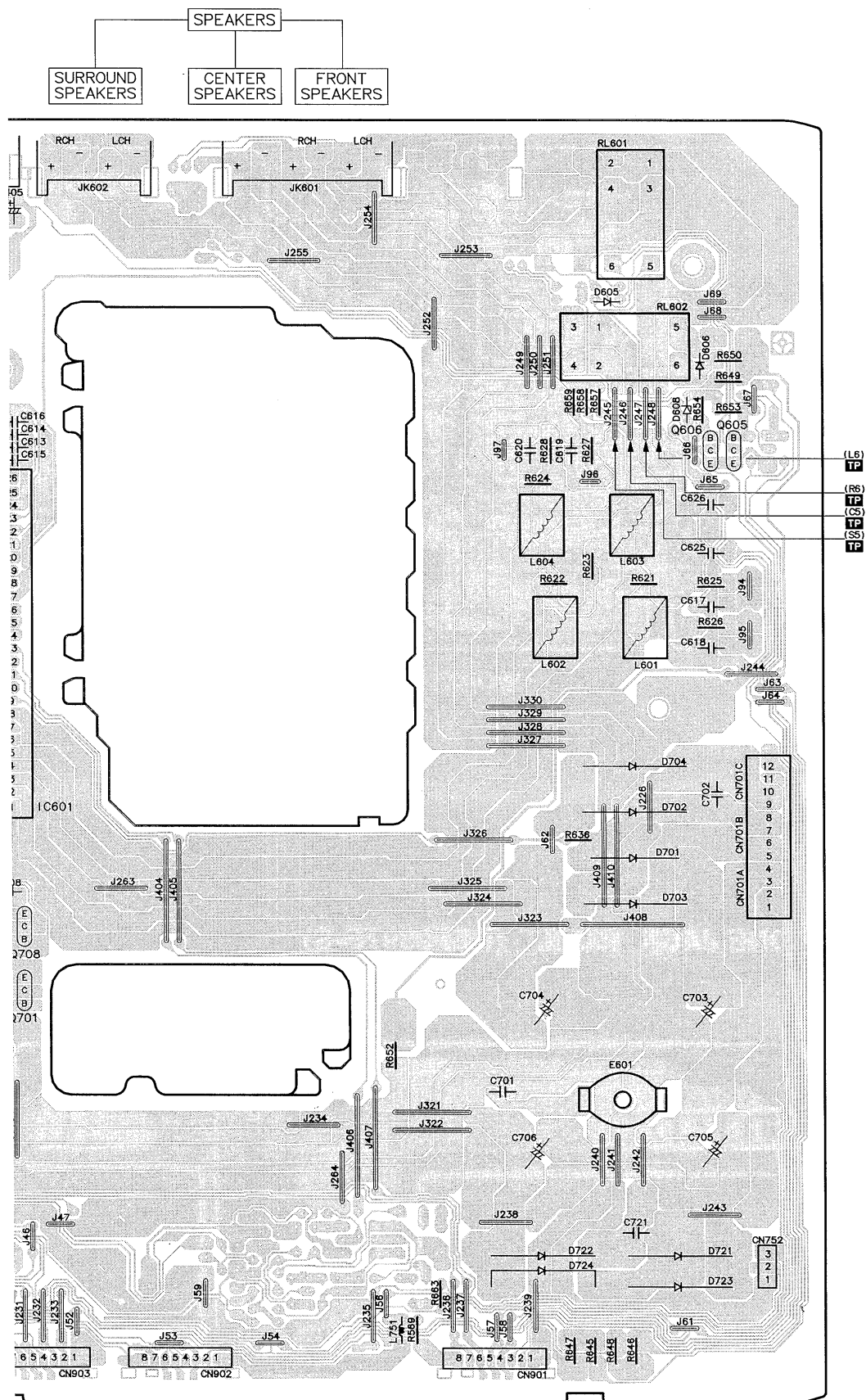


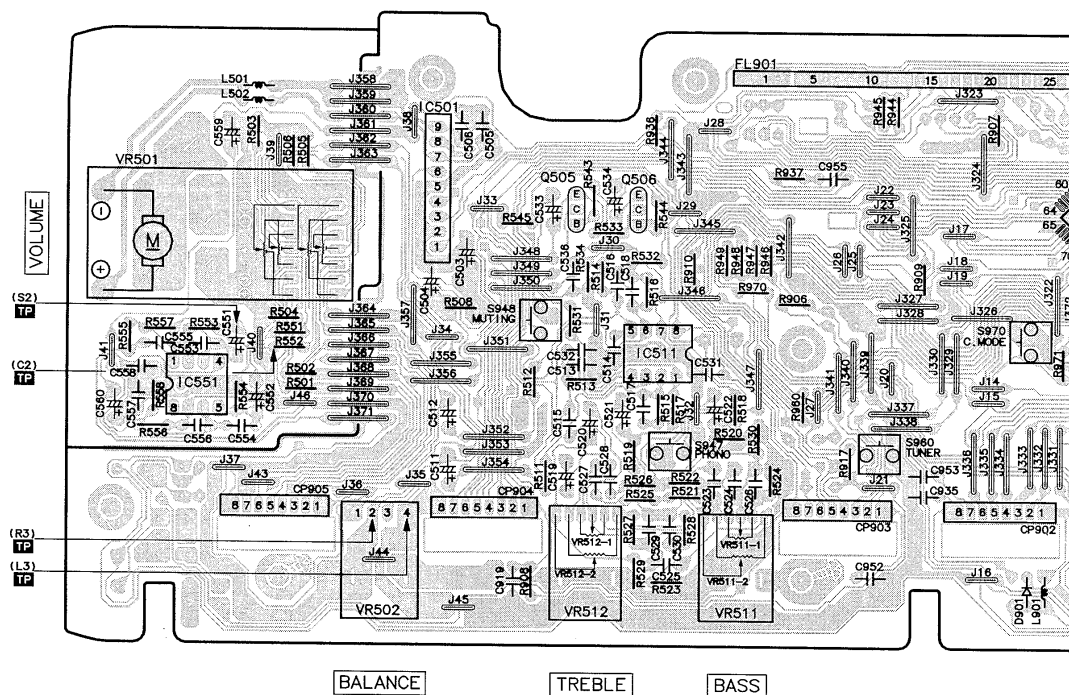
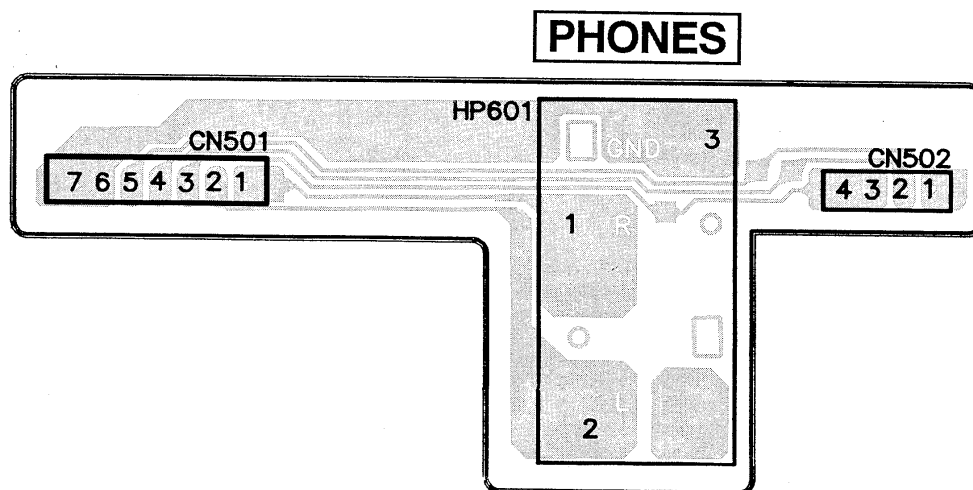


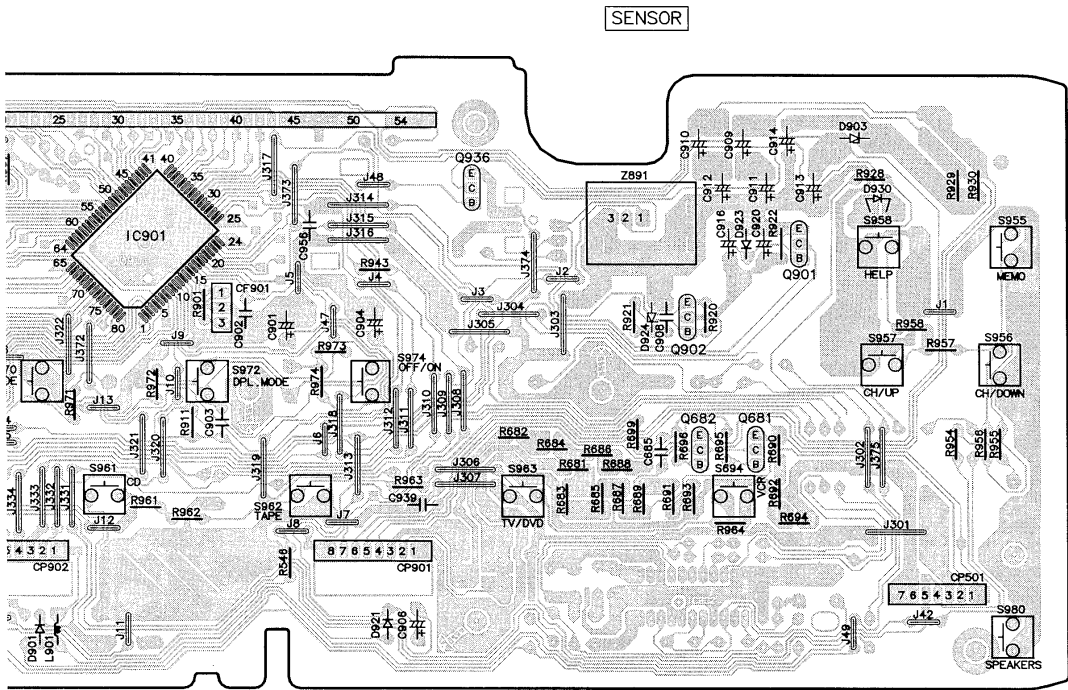


■ Printed Circuit Board

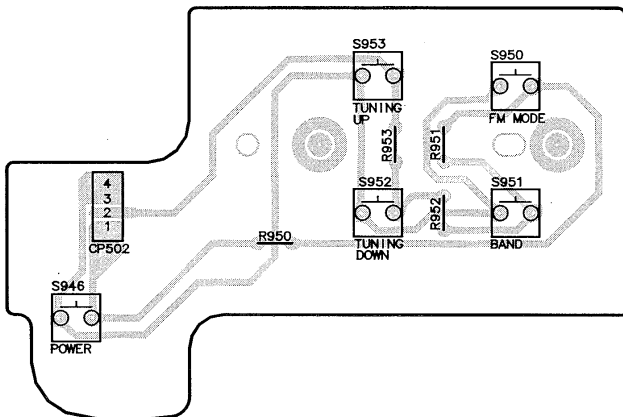
E MAIN P.C.B. (REP2444A-M)



C VOLUME P.C.B. (REP2597B-S)**B** PANEL P.C.B. (REP2597B-S)**D** HEADPHONE JACK P.C.B. (REP2597B-S)

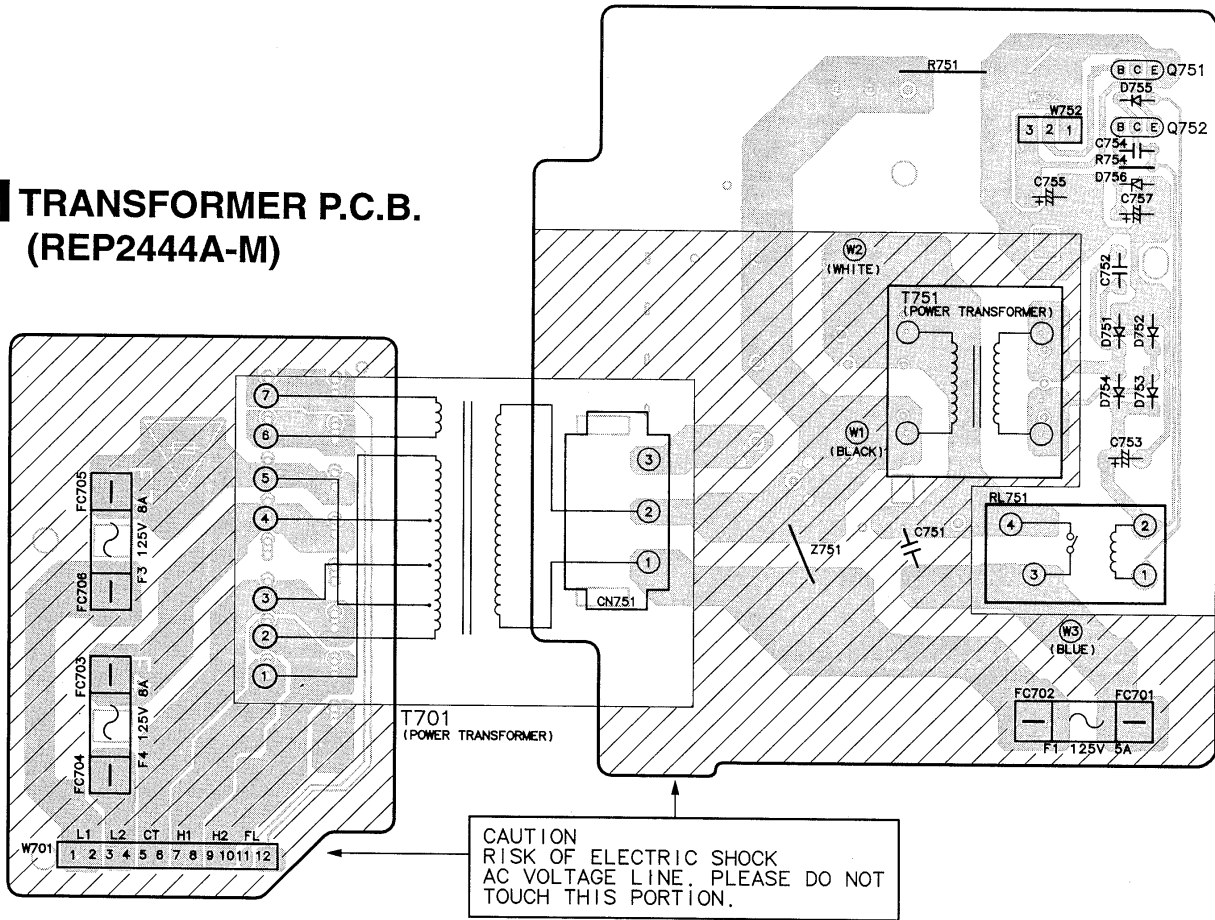


H POWER SWITCH P.C.B. (REP2597B-S)

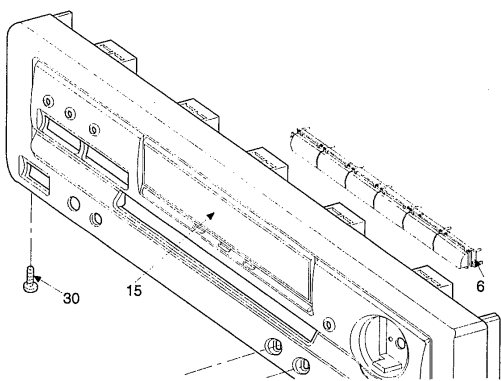


F POWER SUPPLY P.C.B. (REP2446F-P)

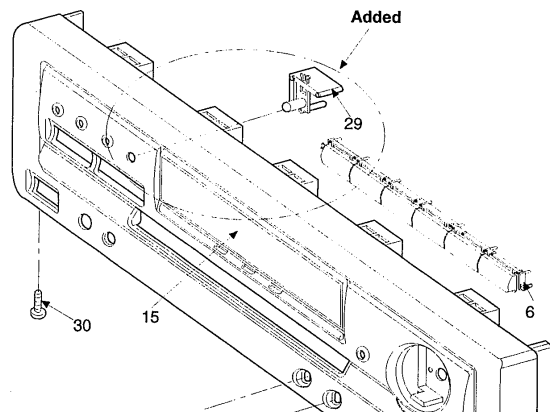
G TRANSFORMER P.C.B. (REP2444A-M)



■ Cabinet Parts Location - (Item added)



SA-EX310P/PC-K

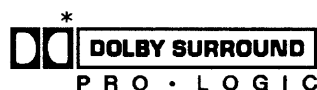


SA-HT220PP-K

Service Manual

AV Control Stereo Receiver

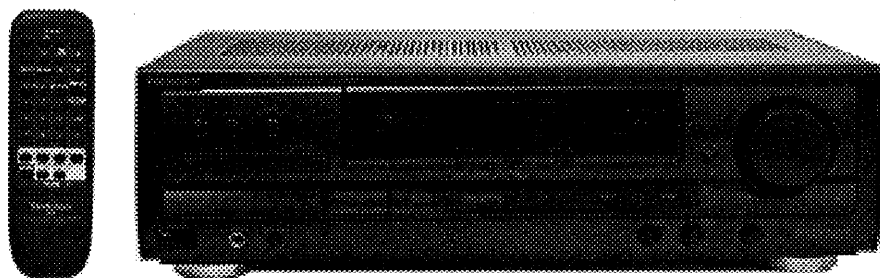
Receiver



SA-EX310

Colour

(K) Black Type



Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada	

* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877.

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Specifications

FM Tuner Section

Frequency range	87.9 – 107.9 MHz
Sensitivity	11.2 dBf (2 μ V, IHF '58)
50 dB quieting sensitivity	
MONO	18.3 dBf (4.5 μ V, IHF '58)
STEREO	38.3 dBf (45 μ V, IHF '58)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	75 dB
STEREO	70 dB
Frequency response	20 Hz – 15 kHz, +1 dB, -2 dB
Alternate channel selectivity	65 dB
Capture ratio	1 dB
Image rejection at 98 MHz	44 dB
IF rejection at 98 MHz	80 dB
Spurious response rejection at 98 MHz	75 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	-35 dB
38 kHz	-50 dB
Antenna terminal(s)	75 Ω (unbalanced)

AM Tuner Section

Frequency range	530 – 1710 kHz
Sensitivity	20 μ V, 330 μ V/m
Selectivity	55 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	60 dB

Video Section

Output voltage at 1 V input (unbalanced)	1 $\pm$ 0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω

Amplifier Section

Rated minimum sine wave RMS power output	
40 Hz – 20 kHz both channels driven	
0.8% total harmonic distortion	70 W per channel (8 Ω)
1 kHz continuous power output both channels driven	
0.05% total harmonic distortion	73 W per channel (8 Ω)
Total harmonic distortion	
Rated power at 40 Hz – 20 kHz	0.8% (8 Ω)
Half power at 1 kHz	0.07% (8 Ω)
Power output at the Dolby Pro Logic operation	
0.9% at 1 kHz,	
Front	2 x 70 W (8 Ω)
Center	70 W (8 Ω)
Surround	70 W (8 Ω)
Low frequency damping factor	30 (8 Ω)
Load impedance	
Front	8 Ω
Center	8 Ω
Surround	4 – 8 Ω
SMPTE intermodulation distortion	0.3%
Frequency response	
PHONO	RIIA standard curve $\pm$ 0.8 dB
CD, Tape, TV/DVD, VCR	10 Hz – 70 kHz, $\pm$ 3 dB
Input sensitivity	
PHONO	0.4 mV (3 mV, IHF '66)
CD, TAPE, TV/DVD, VCR	27 mV (200 mV, IHF '66)
S/N (IHF A)	
PHONO	70 dB (78 dB, IHF '66)
CD, TAPE, TV/DVD, VCR	75 dB (83 dB, IHF '66)

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Contents

⚠ WARNING

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Input impedance	
PHONO	47 k Ω
CD, Tape, TV/DVD, VCR	22 k Ω
Tone controls	
BASS	50 Hz, +10 to -10 dB
TREBLE	20 kHz, +10 to -10 dB
Subwoofer frequency response	7Hz-100Hz, $\pm$ 3dB

■ General

Power consumption	175 W (In standby condition : 2 W)
Power supply	AC 120 V, 60 Hz
Dimensions (W x H x D)	430 x 136 x 309 mm (16 ¹⁵ / ₁₆ " x 5 ¹¹ / ₃₂ " x 12 ⁵ / ₃₂ ")
Weight	6.4 kg (14.2 lb.)

Notes :

- Specifications are subject to change without notice.
Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

■ Contents

	Page		Page
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BEFORE REPAIR AND ADJUSTMENT	2	BLOCK DIAGRAM	17 ~ 20
PROTECTION CIRCUITRY	2	SCHEMATIC DIAGRAM	21 ~ 31
OPERATION CHECKS & MAIN COMPONENT REPLACEMENT	3 ~ 6	MEASUREMENTS AND ADJUSTMENTS	32
TROUBLESHOOTING	7 ~ 10	TERMINAL GUIDE OF ICs, TRANSISTORS AND DIODES	32
TERMINAL FUNCTION OF ICs	10	CABINET PARTS LOCATION	33
PRINTED CIRCUIT BOARD	11 ~ 15	REPLACEMENT PARTS LIST	34 ~ 35
		RESISTORS & CAPACITORS	36 ~ 39
		PACKAGING	39

■ Safety Precautions (This "Safety Precaution" is applied only in U.S.A.)

- Before servicing, unplug the power cord to prevent an electric shock.
- When replacing parts, use only manufacturer's recommended components for safety.
- Check the condition of the power cord. Replace if wear or damage is evident.
- After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
- Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• Insulation Resistance Test

- Unplug the power cord and short the two prongs of the plug with a jumper wire.
- Turn on the power switch.
- Measure the resistance value with ohmmeter between the jumper AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3M Ω and 5.2M Ω to all exposed parts*. (Fig. 1) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. 2)
*Note : Some exposed parts may be isolated from the chassis by design. These will read infinity.
- If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

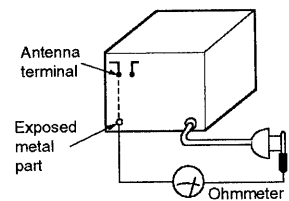


Fig. 1

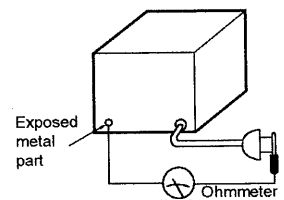
Resistance = 3M Ω – 5.2M Ω 

Fig. 2

Resistance = Approx ∞ **■ Before Repair and Adjustment**

Disconnect AC power, discharge both Power Supply Capacitors (C703 and C704) through a 10 Ω , 5W resistor to ground. DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac, to avoid overcurrent. Current consumption at 120V, 60 Hz in NO SIGNAL mode should be 300 ~ 800 mA.

■ Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

- Turn off the power.
- Determine the cause of the problem and correct it.
- Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ Operation Checks and Main Component Replacement Procedures

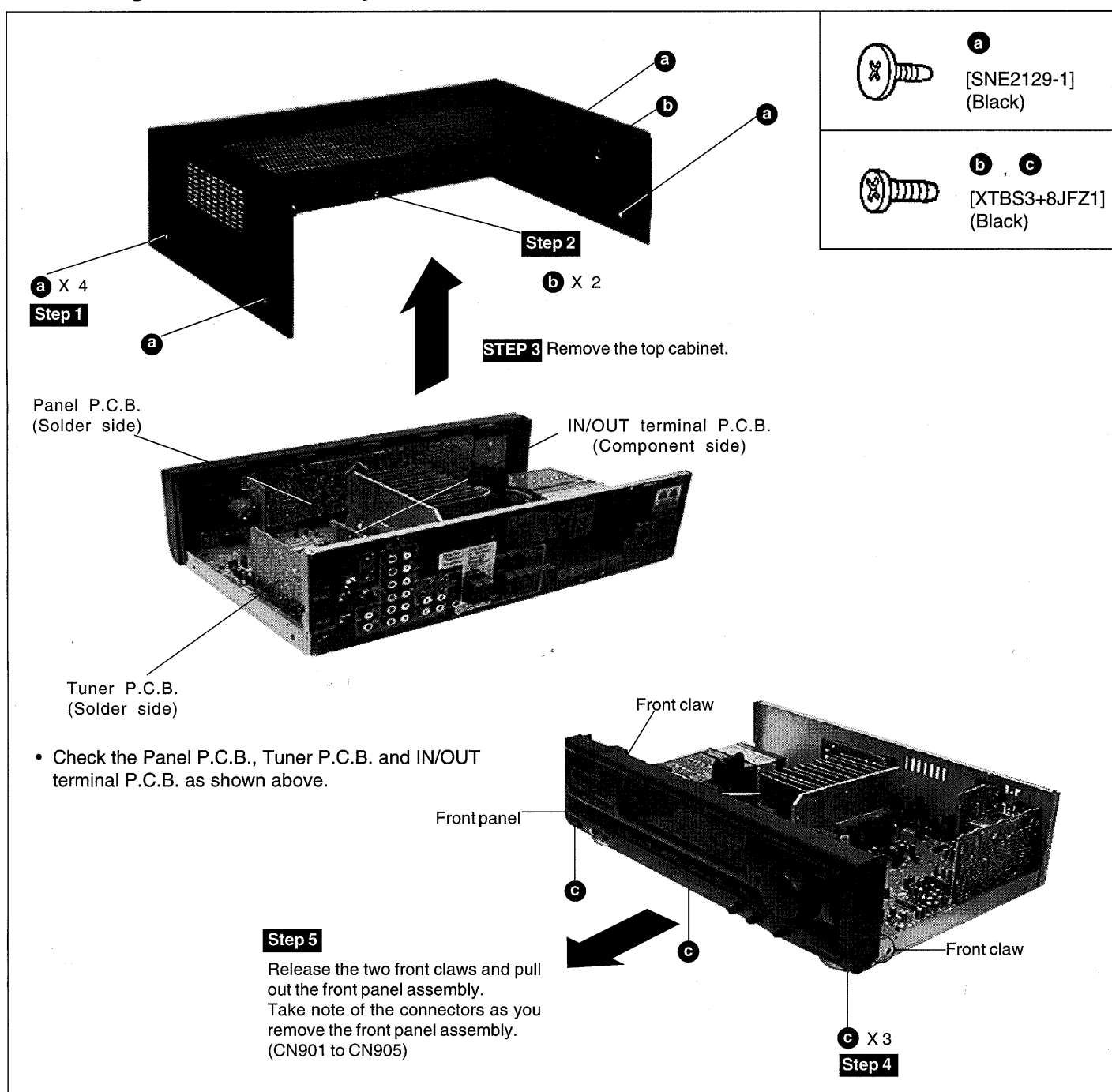
"ATTENTION SERVICER" Some chassis components may have sharp edges.
Be careful when disassembling and servicing.

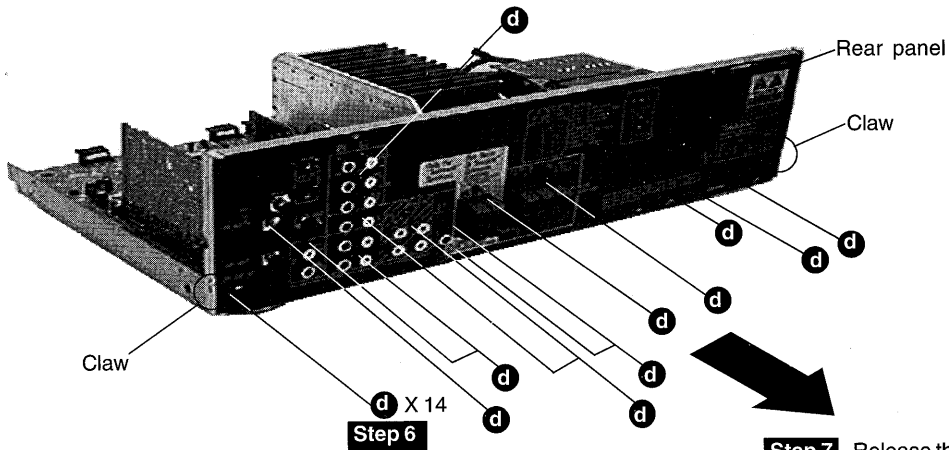
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

• Contents

	page
• Checking Procedure for Major P.C.B.	3 ~ 4
• Replacement of Power IC and Regulator Transistor	5 ~ 6

■ Checking Procedure for Major P.C.B.

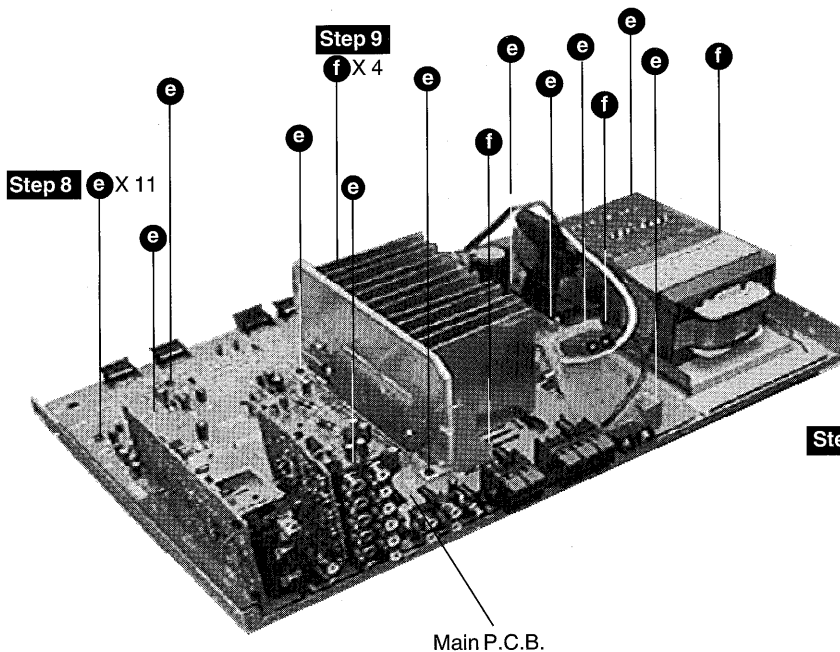




Step 6

Step 7

Release the claws and then remove the rear panel.

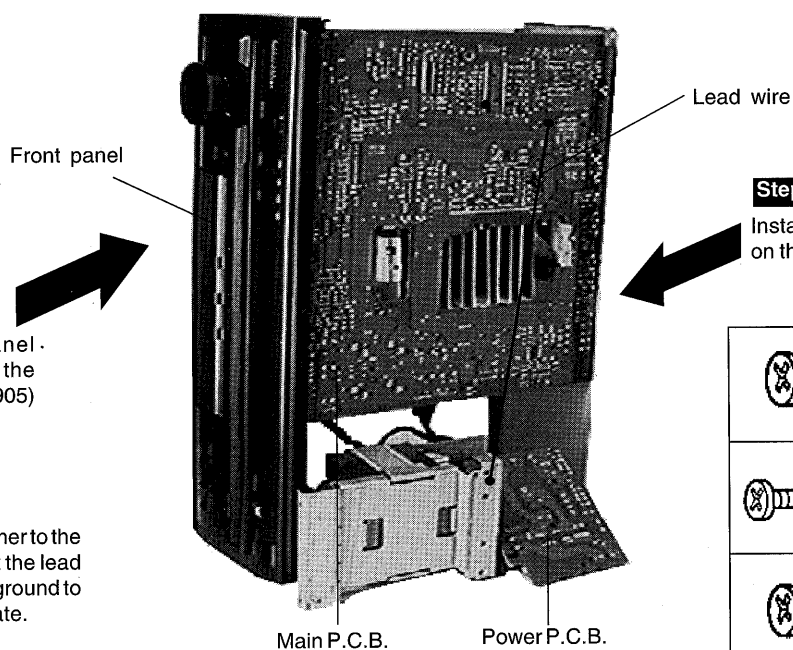


Step 8

Step 9

Step 10

Remove the main P.C.B.



Step 12

Fix back the front panel assembly and connect the connectors. (CN901 to CN905)

Step 13

Connect back the transformer to the power P.C.B. and connect the lead wire from the main P.C.B. ground to the transformer ground plate.

Step 14

Check the Main P.C.B. and the Power P.C.B. as shown on the left.

Step 11

Install the rear panel temporarily on the main P.C.B. again.



d
[XTBS3+8JFZ1]
(Black)



e
[XTB3+20JFZ]
(Black)



f
[XTB3+8FFZ]
(Black)

■ Replacement of Power IC and Regulator Transistor

Step 1

Remove the top cabinet.

Step 2 Cut the joints as shown below. (4 joints)

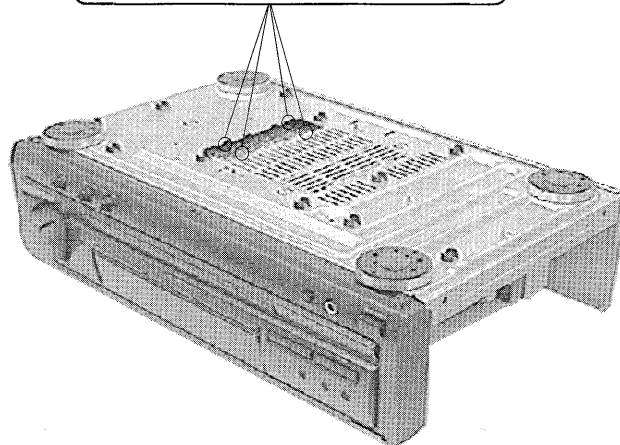
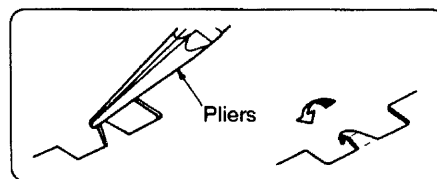
Locate the nipper to the thin portion of the joint.

Nipper

Bottom cover

Cut the joint.

Step 3 Fold the joints. (4 joints)

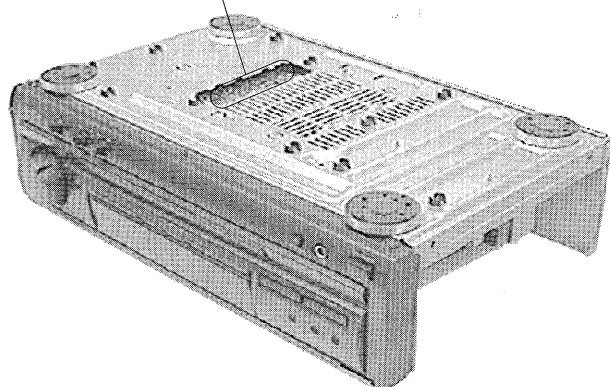


CAUTION

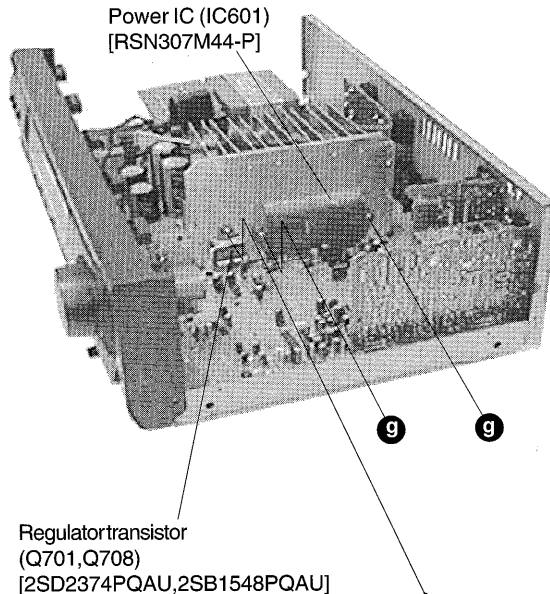
1. After replacing the power IC or regulator transistor, apply a sufficient quantity of compound grease (RFKX0002/SZZ0L15) between the heat sink and the power IC or regulator transistor (Radiation of power IC).
2. Tighten enough the screws () after replacing the power IC and regulator transistor. Otherwise, the heat radiation works little.
3. When installing or removing the power IC or transistor holder, be sure to use an offset screwdriver.

Step 4

Desolder the terminals of Power IC and Regulator Transistor.



Power IC (IC601)
[RSN307M44-P]

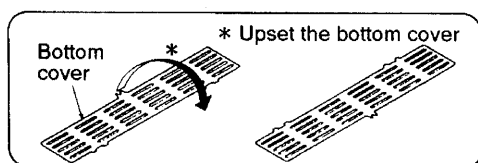


Step 5 × 3



Installation of the bottom cover after replacement

Step 1

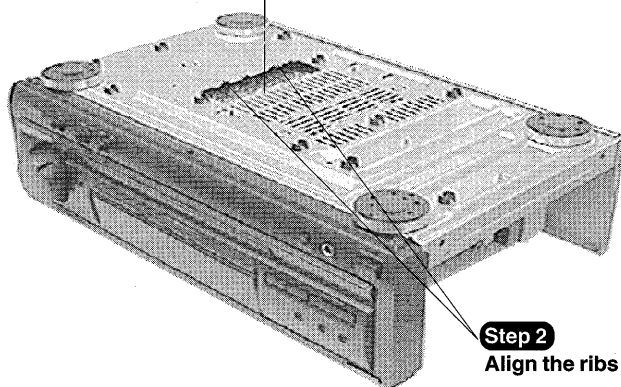


Ribs

h

Step 3

Screw (XTB3+8J)
(Prepare this screw to fix the bottom cover.)



Step 2

Align the ribs of bottom cover with lugs.



g

[XTW3+15T]

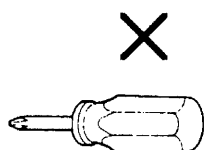


h

[XTB3+8J] (Black)

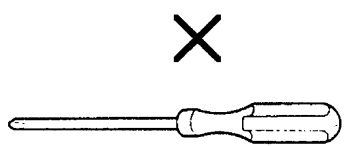
CAUTION

1. A long straight screwdriver cannot be used for removing or mounting the screws since its long grip interferes with the neighbouring P.C.B. (See Fig.1)
2. A short straight screwdriver may be used for removal, but cannot be used for mounting because the limited space in the unit will not allow sufficient tightening torque. (See Fig.2)



A short straight screwdriver

Fig.2



A long straight screwdriver

Fig.1

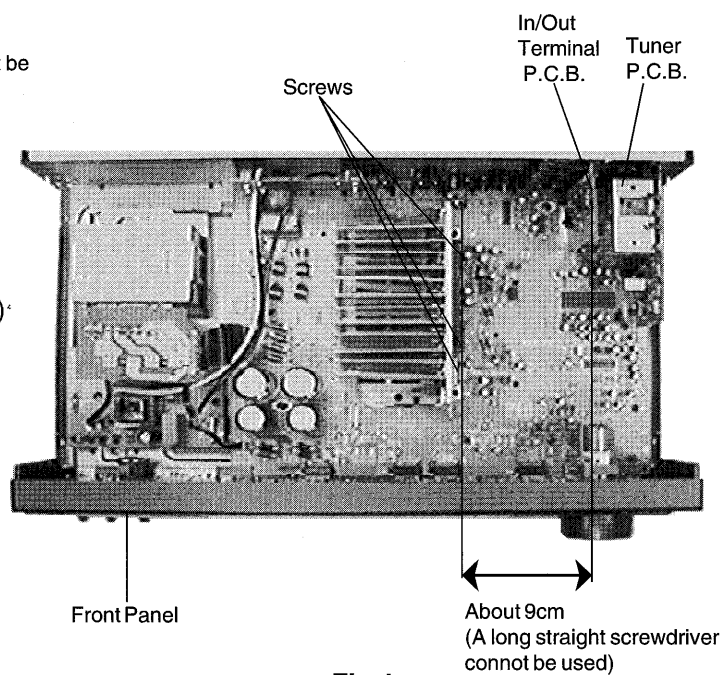


Fig.1

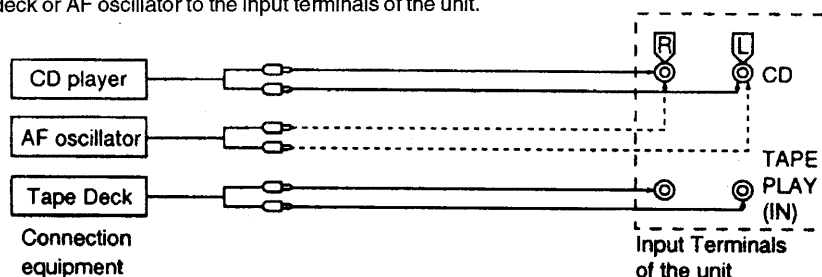
3. Insufficient tightening will cause poor heat dissipation from the power IC and regulator transistor and, in the worst case, may lead to their thermal breakdown.

Troubleshooting

This unit has test points on each circuit board block for use in troubleshooting.

CONNECTION

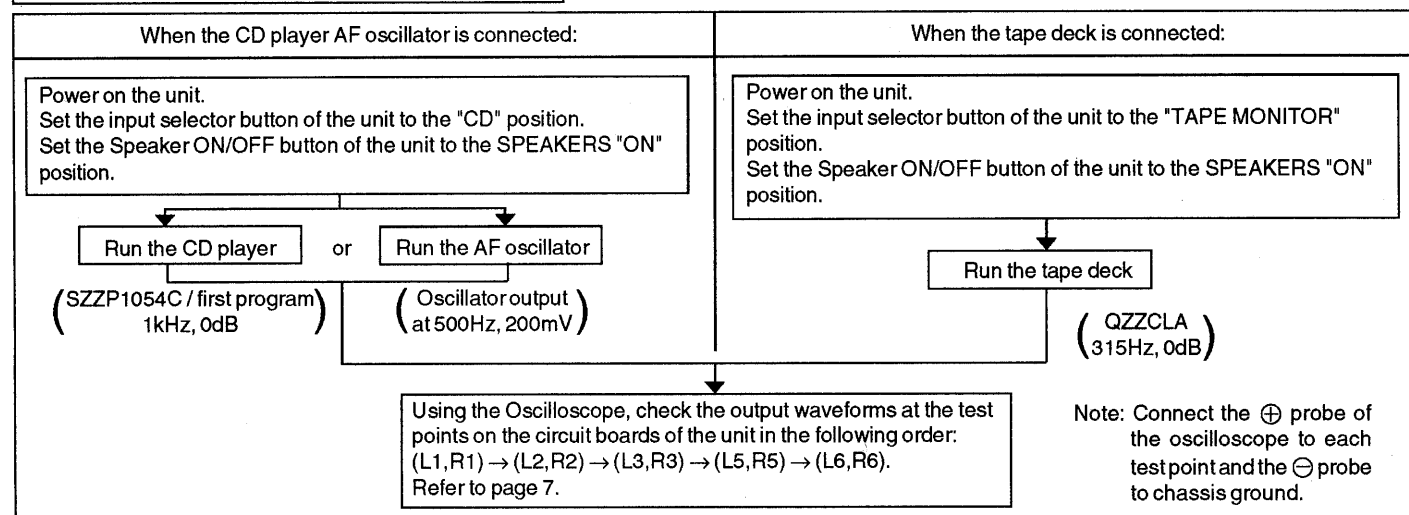
Connect either a CD player, tape deck or AF oscillator to the input terminals of the unit.



REQUIRED ITEMS

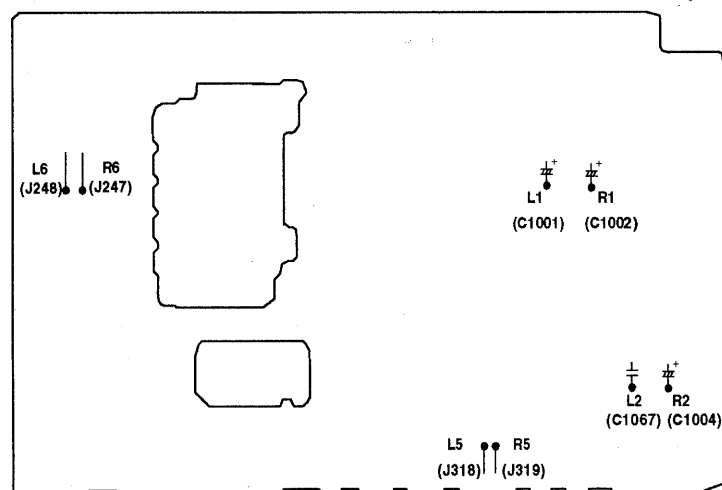
- | | | |
|---------------------------------|-------|--|
| 1. Testing with a CD player | ————— | Test deck (SZZP1054C / first program, 1kHz, 0dB) |
| 2. Testing with a tape deck | ————— | Test tape (QZZCLA / 315Hz, 0dB) |
| 3. Testing with a AF oscillator | ————— | Set the output at 500Hz, 200mV |
| 4. Oscilloscope (min. 10MHz) | ----- | To measure the output waveform at the test points. |

TEST PROCEDURE FOR AMPLIFIER CIRCUIT

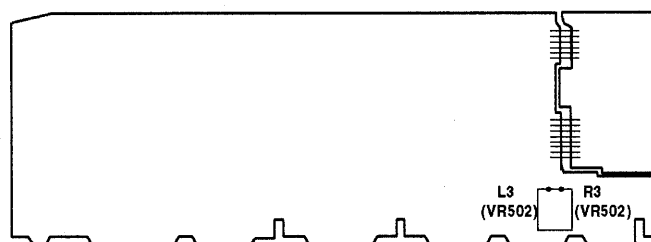


TEST POINTS POSITIONS OF AMPLIFIER CIRCUIT

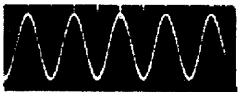
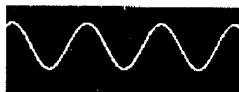
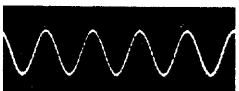
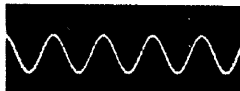
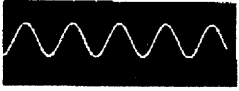
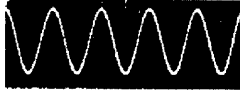
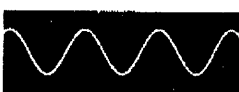
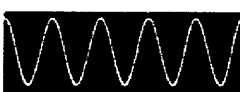
MAIN P.C.B. (COMPONENT SIDE)



PANEL P.C.B. (COMPONENT SIDE)



NORMAL WAVEFORMS OF AMPLIFIER CIRCUIT AND LIKELY FAULTY BLOCKS

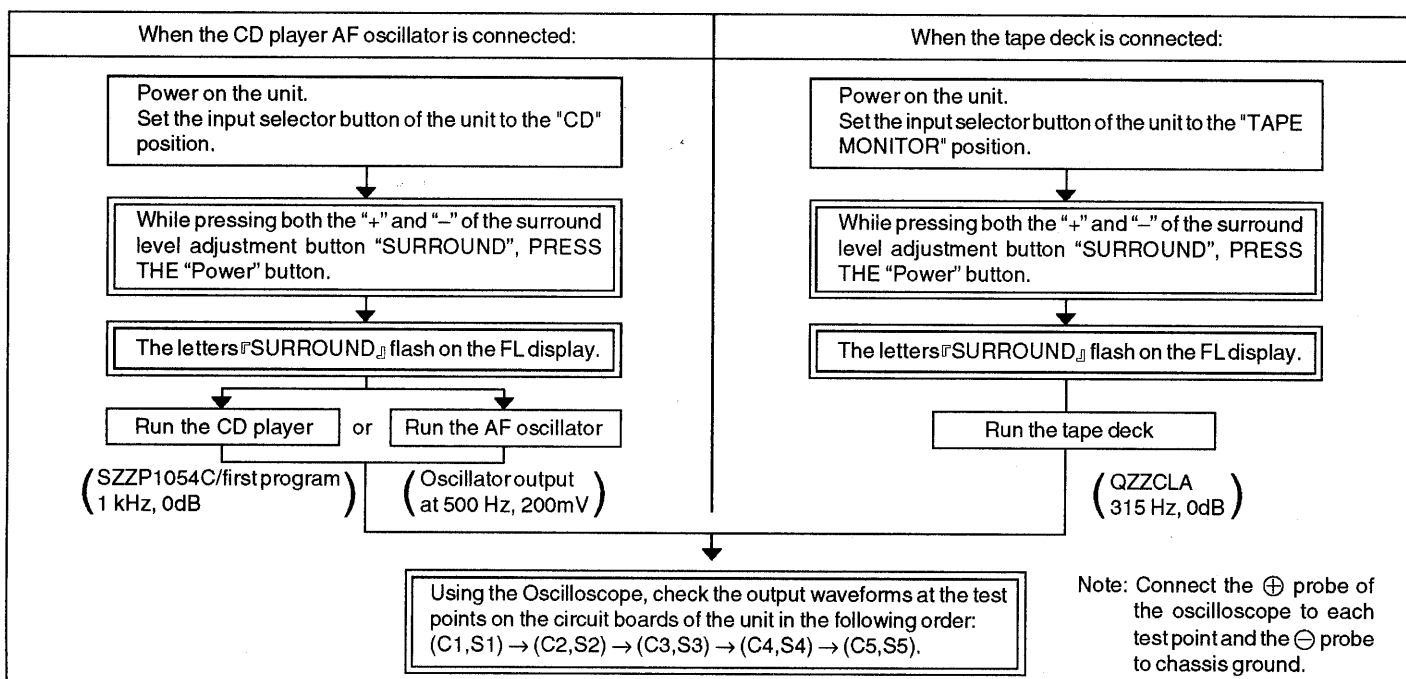
TP	CD Player	Tape deck	AF oscillator	Likely faulty block if the waveform shown at the left is not present.
L1/R1	 0.5msec 2V	 1msec 500mV	 1msec 500mV	Input selector block IC402 & area
L2/R2	 0.5msec 200mV	 1msec 500mV	 1msec 500mV	Dolby pro logic block IC1001, IC1002 & area
L3/R3	 0.5msec 50mV	 1msec 100mV	 1msec 50mV	Master volume block VR501 & area
L5/R5	 0.5msec 100mV*	 1msec 500mV	 1msec 500mV	Power limiter block Q601 and Q602 & area
L6/R6	 0.5msec 5V	 1msec 500mV*	 1msec 1V*	Main amplifier block IC601 & area

Measurement conditions. Volume control (VR501), Treble control (VR512) and Bass control (VR511) positions : 0

*Volume control position (VR501) for these test : 0

CHECKING PROCEDURE FOR SURROUND CIRCUIT

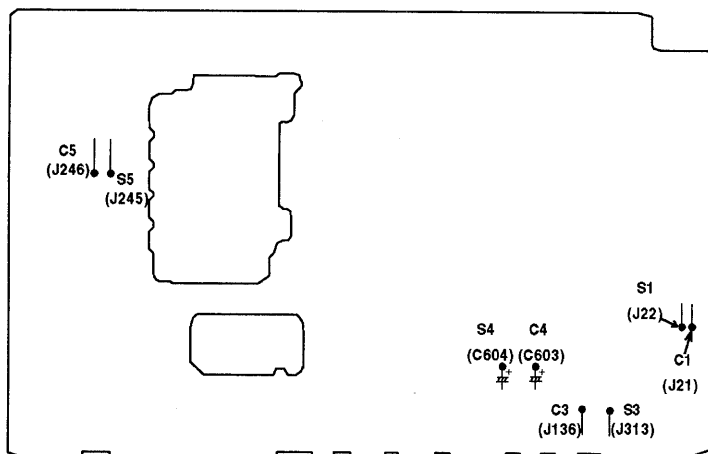
Outputting surround signals normally requires that opposite phase signals be applied to both the left and right channels. However, this unit incorporates a service mode, allowing the surround circuit to be tested using in-phase signals.



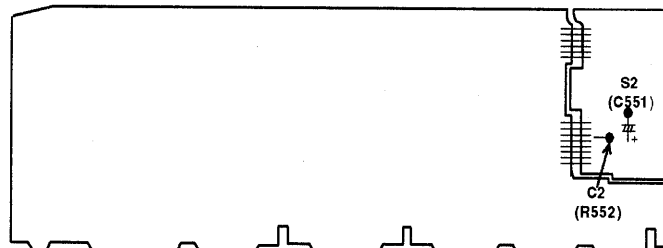
• To Exit the service mode, power off the unit.

TEST POINTS POSITIONS OF SURROUND CIRCUIT

MAIN P.C.B. (COMPONENT SIDE)



PANEL P.C.B. (COMPONENT SIDE)



NORMAL WAVEFORMS OF SURROUND CIRCUIT AND LIKELY FAULTY BLOCKS

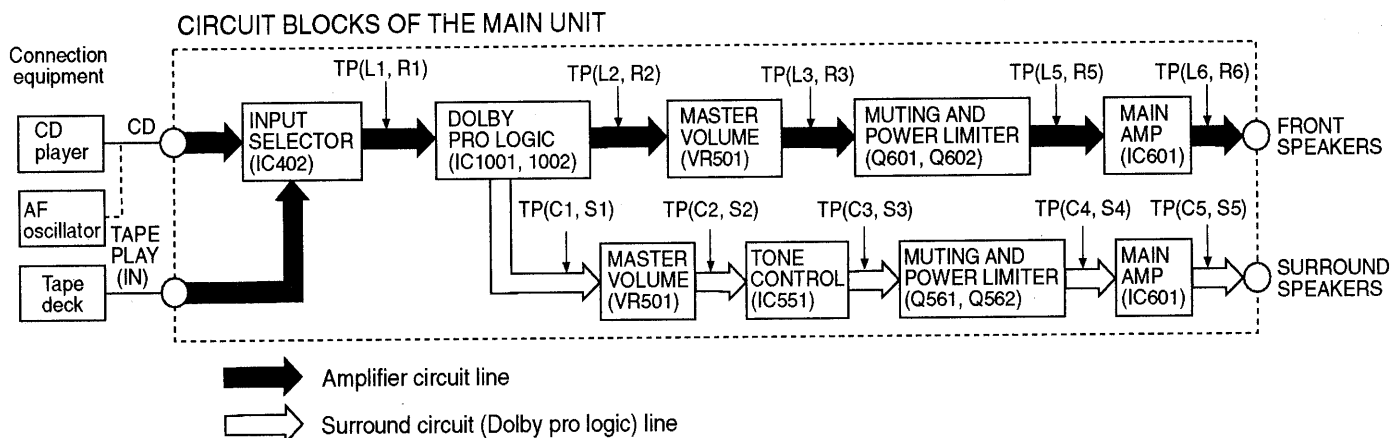
TP	CD player	Tape deck	AF oscillator	Likely faulty block if the normal waveform shown at the left is not present.
C1/S1	 0.5 msec 500 mV	 1 msec 200 mV	 1 msec 200 mV	Dolby pro logic block IC1001, IC1002 & area
C2/S2	 0.5 msec 100 mV	 1 msec 20 mV	 1 msec 20 mV	Master volume block VR501 & area
C3/S3	 0.5 msec 2 V	 1 msec 500 mV	 1 msec 500 mV	Tone control block IC551 & area
C4/S4	 0.5 msec 200 mV*	 1 msec 500 mV	 1 msec 500 mV	Power limiter block through Q561, Q562 & area
C5/S5	 0.5 msec 100 mV*	 1 msec 10 V	 1 msec 20 V	Main amplifier block IC601 & area

Measurement conditions. Volume control (VR501), Treble control (VR512) and Bass control (VR511) positions : ○

*Volume control position (VR501) for these test

: ○

CIRCUIT BLOCKS



OVERLOAD DETECTION FUNCTION

The HIC protection circuit functions if any cord at a speaker terminal is short-circuited or if the unit overheats because of improper operation. At the same time, 『OVERLOAD』 scrolls across the FL display.

In this state, all keys remain inoperative; if any key is pressed, 『SWITCH OFF POWER』 scrolls across the FL display.

If an overload occurs, immediately power off the unit and check the speaker connections and venting holes. After fixing any faults, power on the unit again and check for proper operation.

If no detects are found, or if the unit remains overloaded after it is power on again, check the circuit for faults.

Terminal Function of ICs

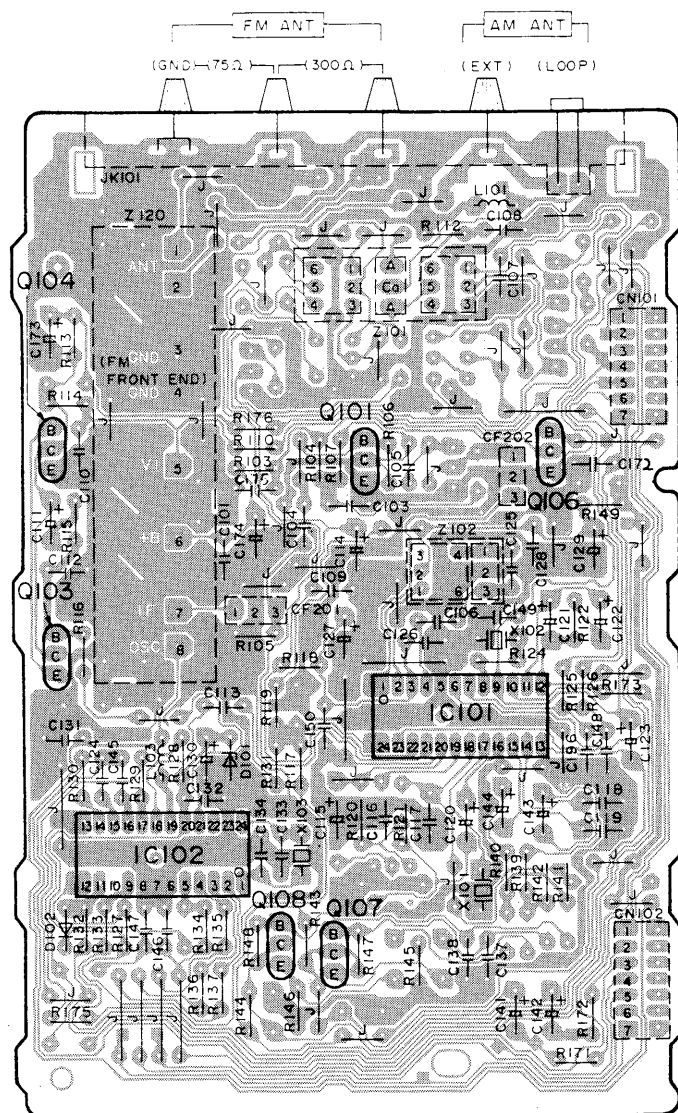
• IC901 (M38B53M4050F) System Microprocessor

Pin No.	Mark	I/O	Function
1~4	KEY4~KEY1	I	Key matrix detect terminal
5	THERMOVLD	I	Thermal/Over load detect terminal
6	FM_ST	I	Stereo signal detect terminal
7	6CH_ST	—	Not used
8	RDS_ST	—	Not used
9	REMOTE	I	Remote control terminal
10	RESET	I	Reset detect terminal
11	RDS_CK	—	Not used
12	RDS_DT	—	Not used
13	GND	—	GND terminal
14	XIN	I	Crystal oscillator terminal
15	XOUT	O	(4 MHz)
16	VDD	I	Power supply terminal
17~21	SFC5~SFC1	O	SFC LED indicator output
22	HOLD	I	Power trip detection input
23	STANDBY_LED	—	Not used
24	FAN_STOP	—	Not used
25	RLY	O	Power relay control output
26	TV/DVD	I	TV/DVD select control input
27	LIMITTER	O	Power limiter control output
28	VEE	I	FL driver pull down voltage
29	S/C_SP	O	Surround/center speaker control output
30	SP_B	O	Speaker B control output
31	SP_A	O	Speaker A control output
32	AF_MUTE	O	Muting control output
33~48	SEG16~SEG1	O	FL segment signal output

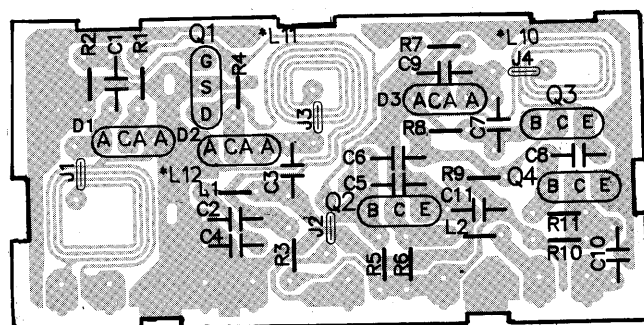
Pin No.	Mark	I/O	Function
49~58	DEG1~DEG10	O	FL digit signal output
59	INIT_IN	I	Diode input
60	VOL_DOWN	O	
61	VOL_UP	O	
62	LOUDNESS	—	Not used
63	IF_DATA	I	Serial data signal
64	REC_MUTE	—	Not used
65	TNR_CE	O	Chip enable signal
66	SEL/TNR_CK	O	Serial clock signal
67	SEL/TNR_DT	O	Serial data signal
68	SEL_ST	O	Level shift control terminal
69	OSD_ST	—	Not used
70	SURR/OSD_CK	O	Serial clock signal
71	SURR/OSD_DT	O	Serial data signal
72	SURR_CE	O	Chip enable signal
73	AVSS	—	GND for A-D converter
74	VREF	I	Reference voltage for A-D conversion
75	SD	I	SD signal detect input
76	AC3_LED	—	Not used
77	HELP_LED	O	LED drive signal (HELP)
78	VIDEO_DET	—	Not used
79	VIDEO_B	O	Video selector control output B
80	VIDEO_A	O	Video selector control output A

Printed Circuit Board

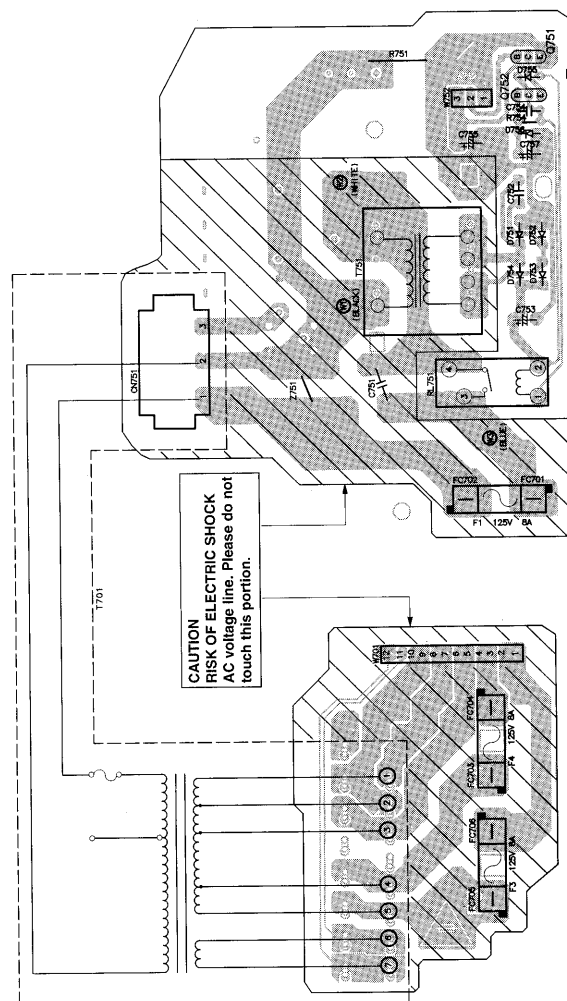
A TUNER P.C.B. (REP2254A-T)



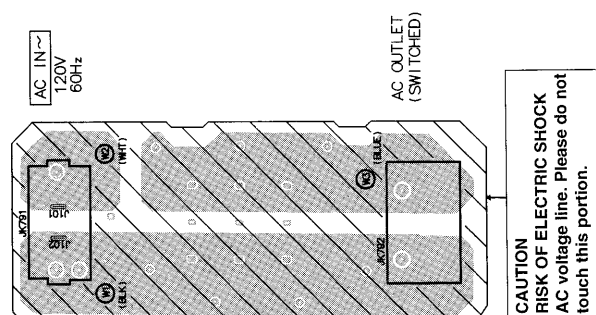
J TUNER PACK P.C.B. (REP1999B)



F POWER SUPPLY P.C.B. (REP2446A-P.....P) (REP2446F-P.....PC)

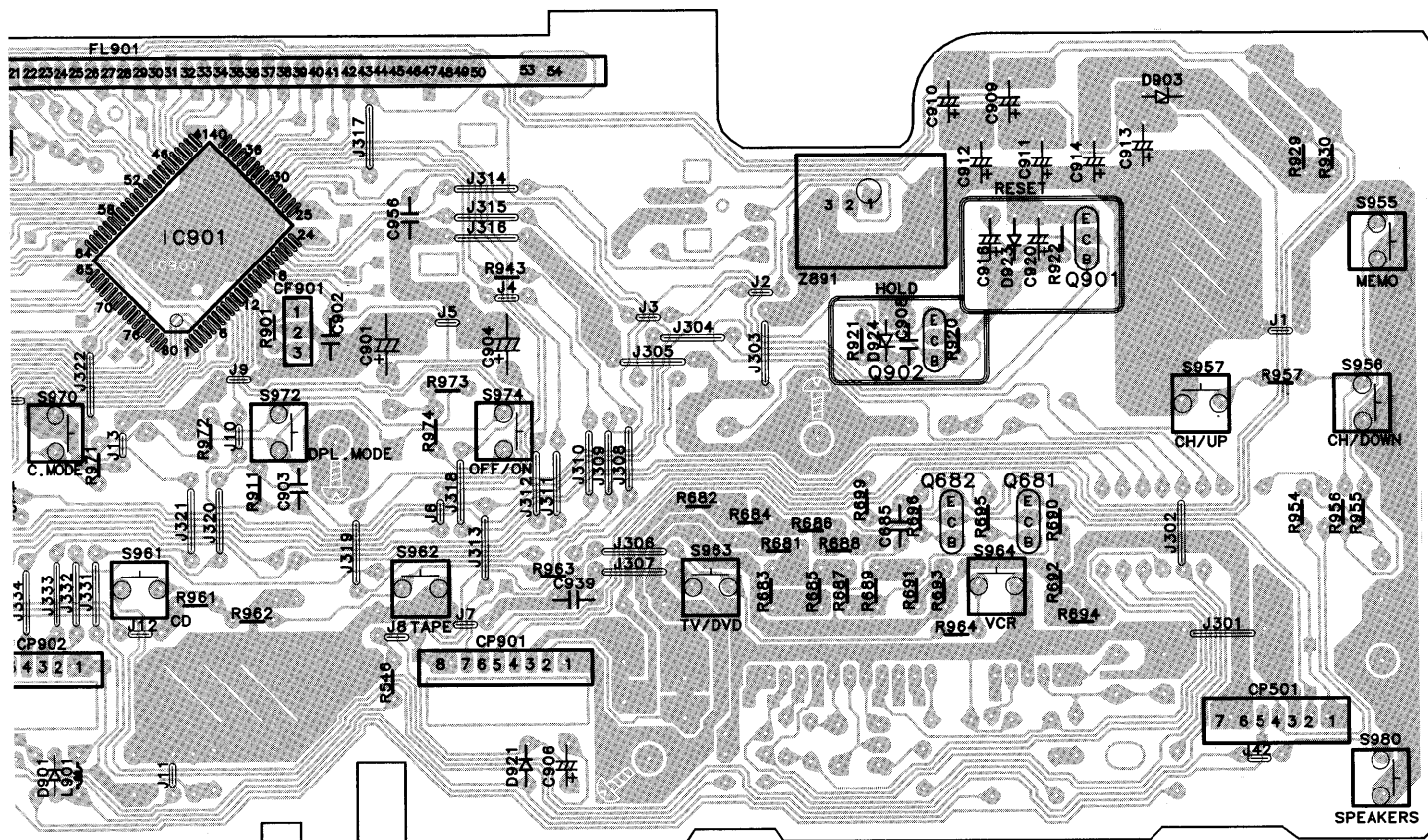


K AC IN / OUT P.C.B. (REP2446A-P.....P) (REP2446F-P.....PC)

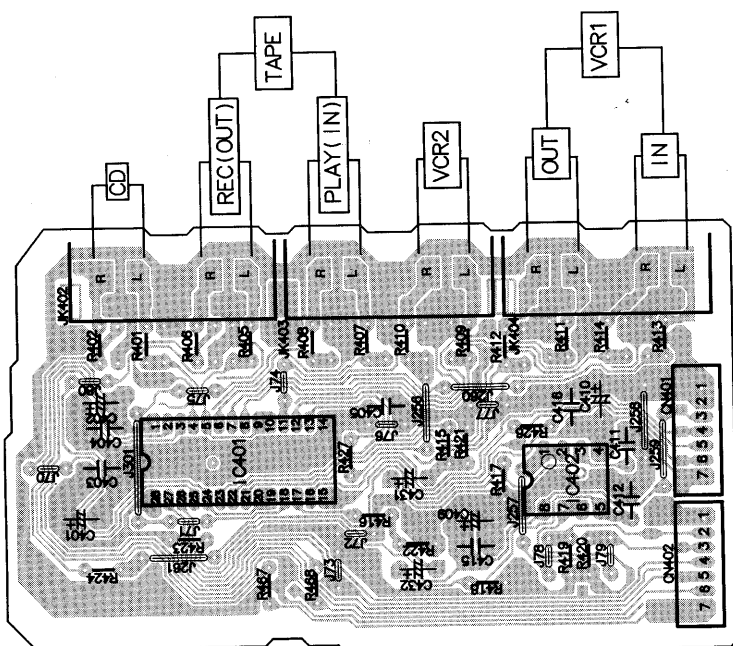


G TRANSFORMER P.C.B. (REP2446A-P.....P) (REP2446F-P.....PC)

SENSOR

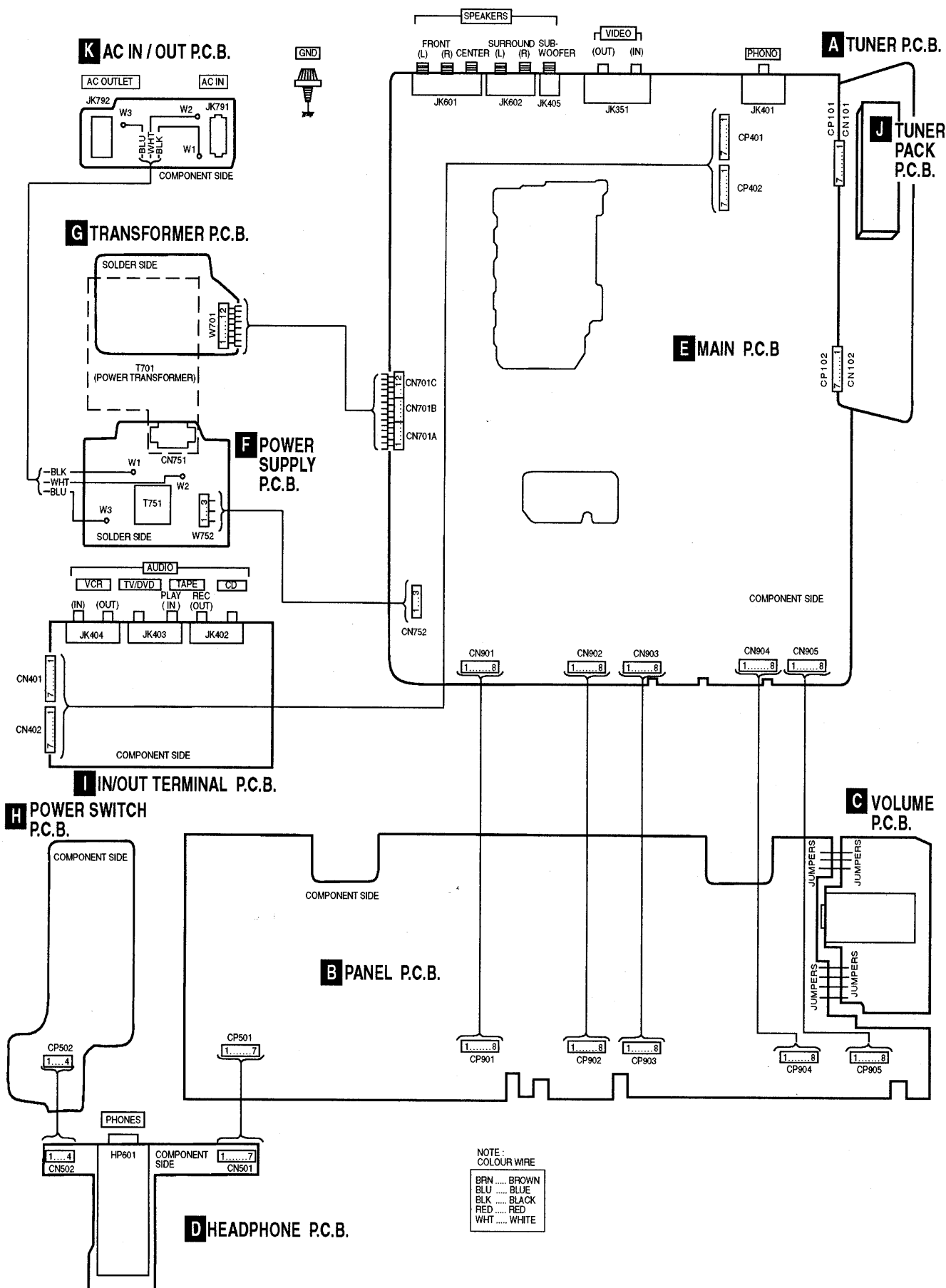


IN/OUT TERMINAL P.C.B. (REP2444A-M)

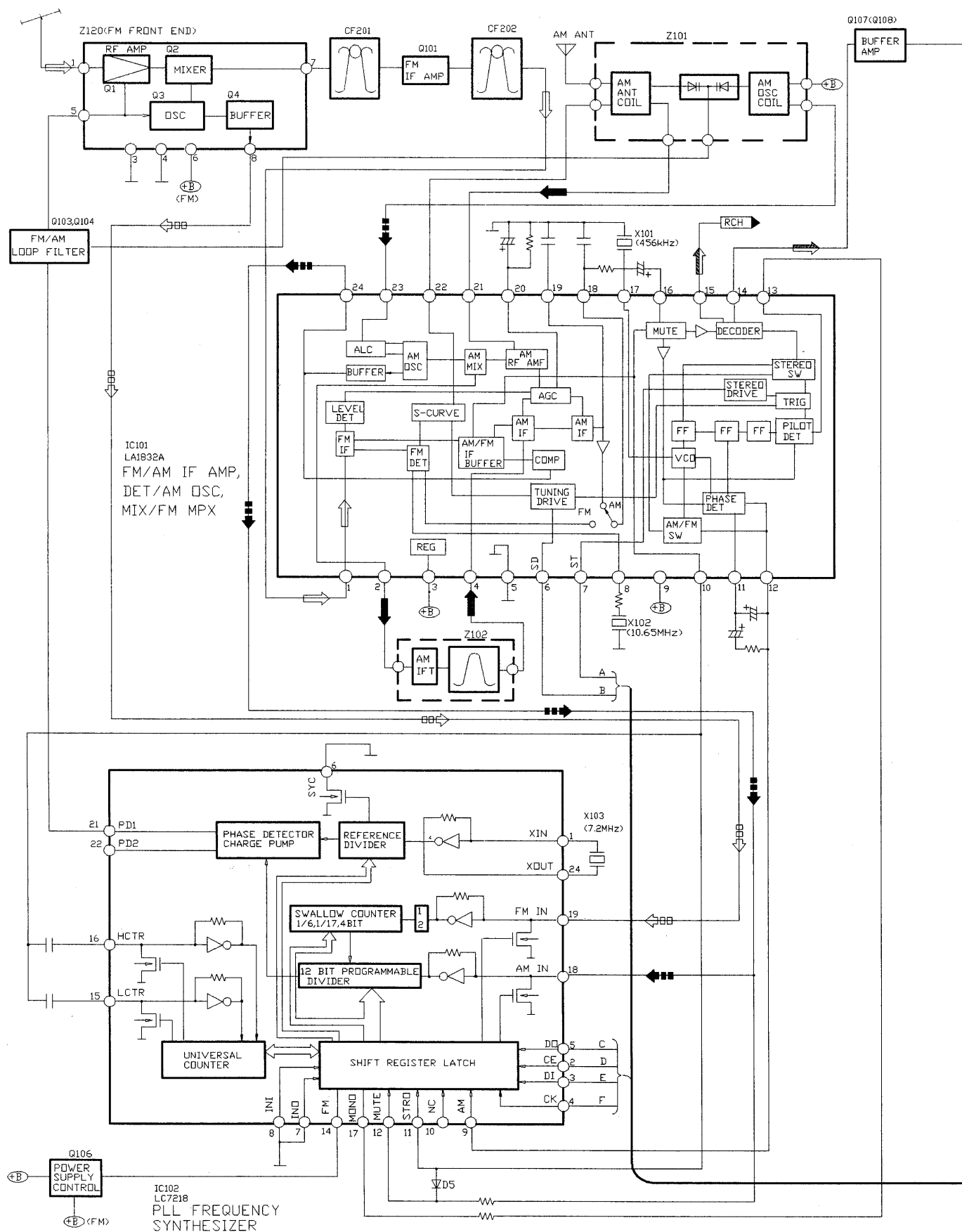


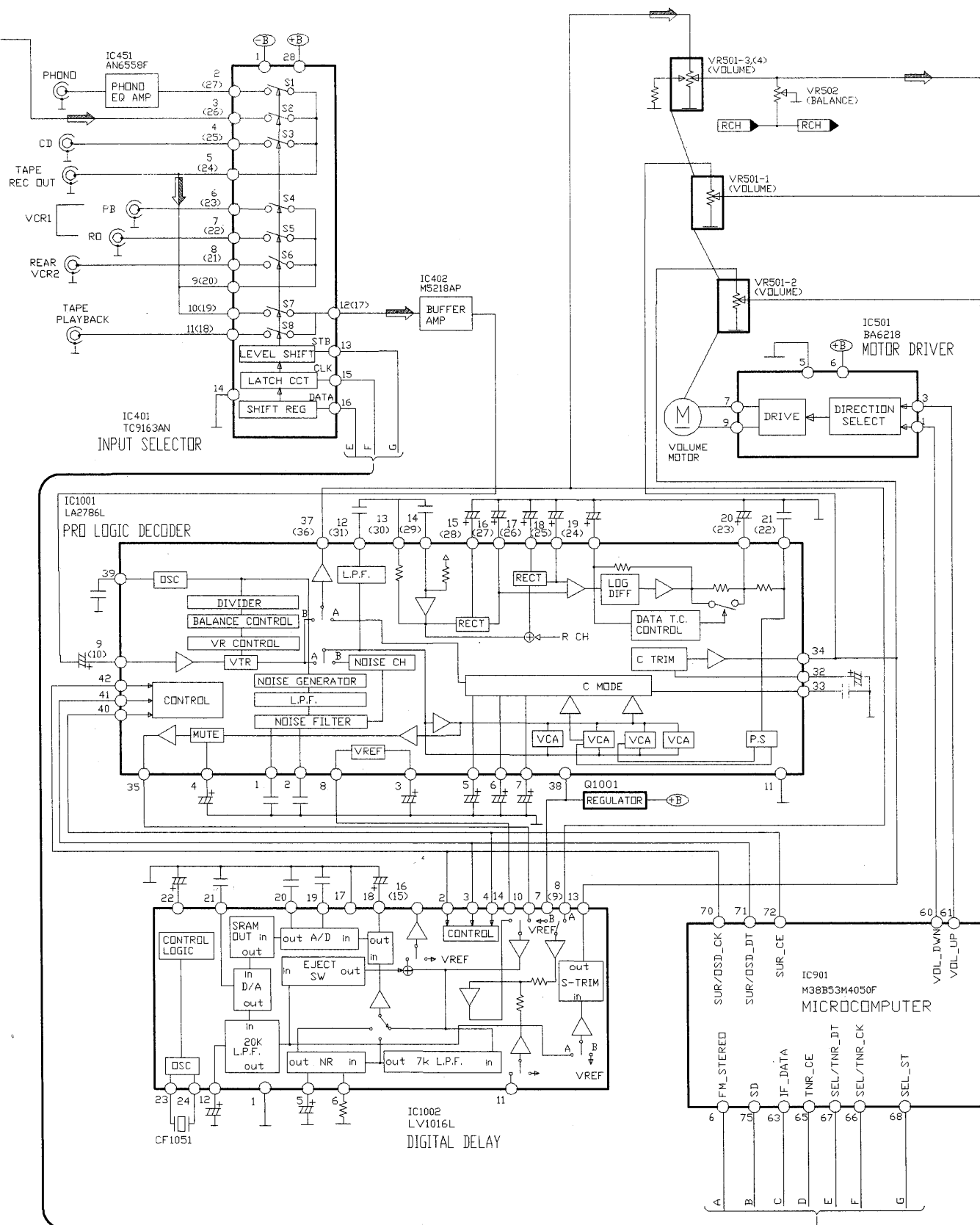


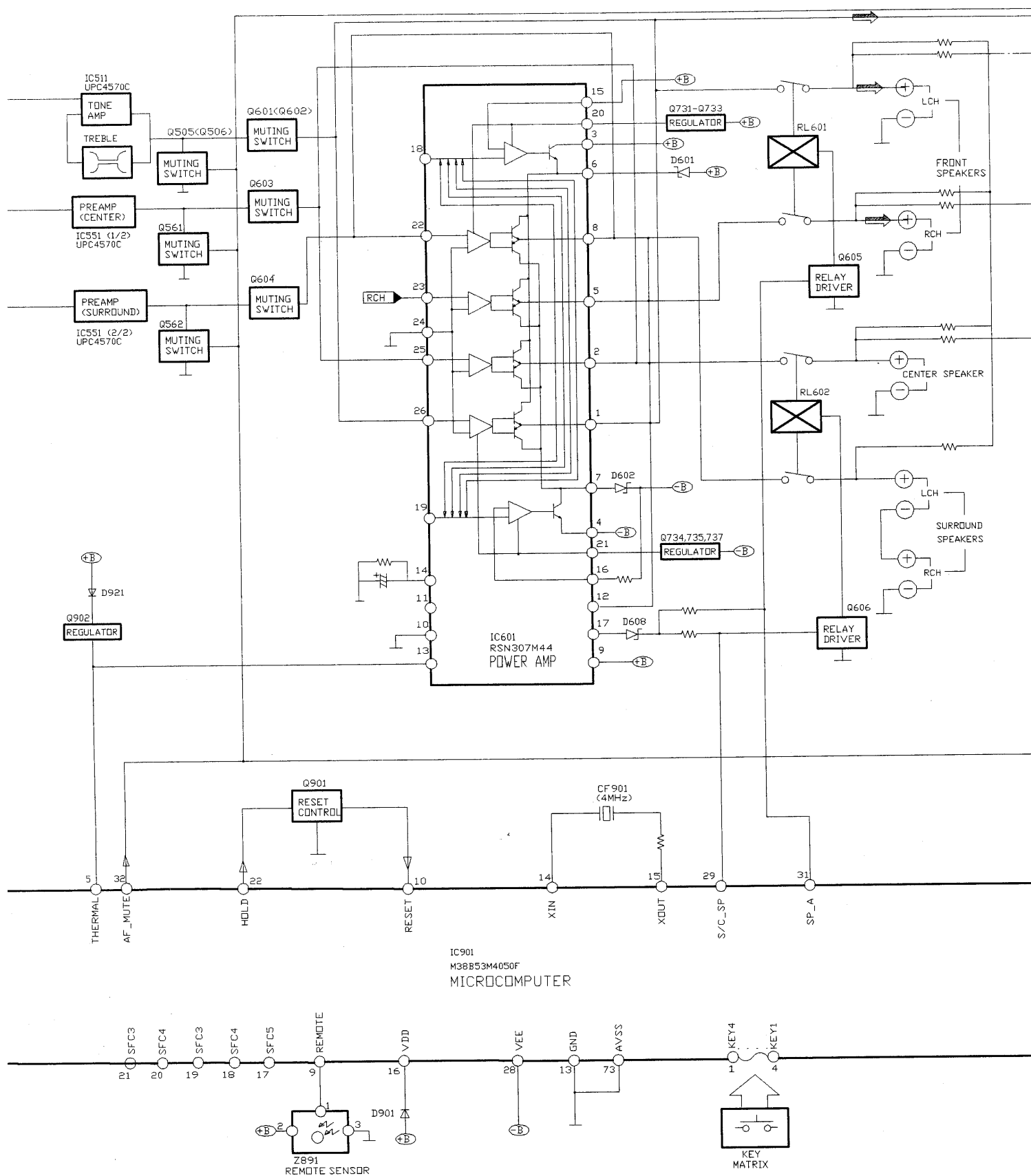
Wiring Connection Diagram

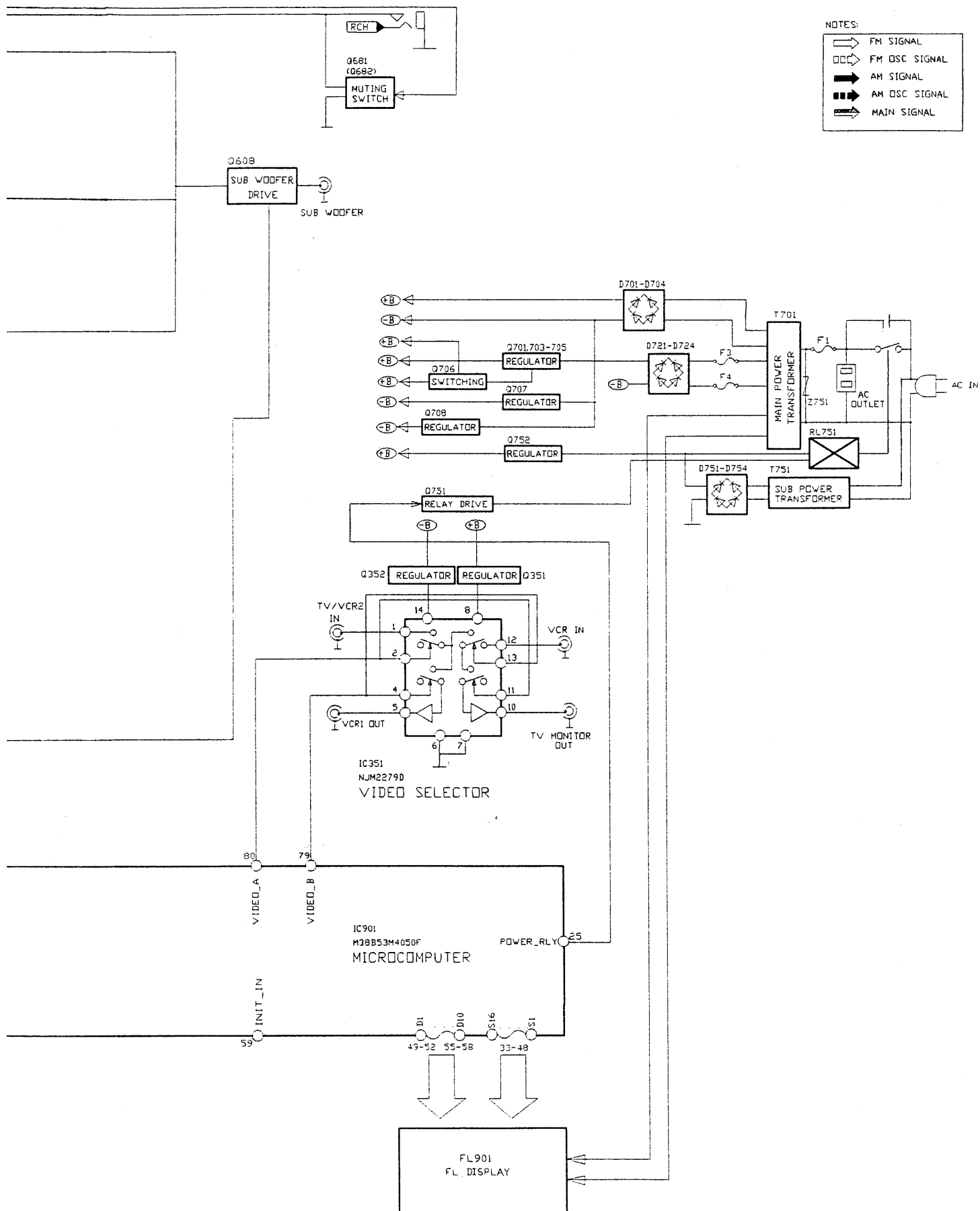


Block Diagram









■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

< for Panel circuit and Volume circuit > (Page 24 ~ 26)

• S947	:	Phono select switch
• S948	:	Muting switch
• S955	:	Memory manual/auto switch
• S956	:	Preset decrease switch
• S957	:	Preset increase switch
• S960	:	Tuner select switch
• S961	:	CD select switch
• S962	:	Tape monitor select switch
• S963	:	TV / DVD select switch
• S964	:	VCR select switch
• S970	:	Center mode select switch
• S972	:	3 stereo ON/OFF switch
• S974	:	Surround ON/OFF switch
• S980	:	Speakers on/off switch
• VR501-1 ~ VR501-4	:	Volume control
• VR502	:	Balance control
• VR511-1 ~ VR511-2	:	Bass control
• VR512-1 ~ VR512-2	:	Treble control

< for Operation circuit > (Page 31)

• S946	:	Power switch
• S950	:	FM Auto/ Mono switch
• S951	:	Band select switch
• S952	:	Tuning decrease switch
• S953	:	Tuning increase switch

• Signal line

— : +B line

- - - : -B line

➡ : Main signal line

➡ : FM signal line

➡ : AM signal line

➡ : AM OSC signal line

➡ : FM OSC signal line

• The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

() AM

< > FM

• Importance safety notice:

Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

- IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminium foil.
 - Ground the soldering iron.
 - Do not touch the pins of IC, LSI or VLSI with fingers directly.
 - Put a conductive mat on the work table.

CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F1 5.0A 125V AND F3, F4 8.0A 125V FUSES.



RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION



These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire hazard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

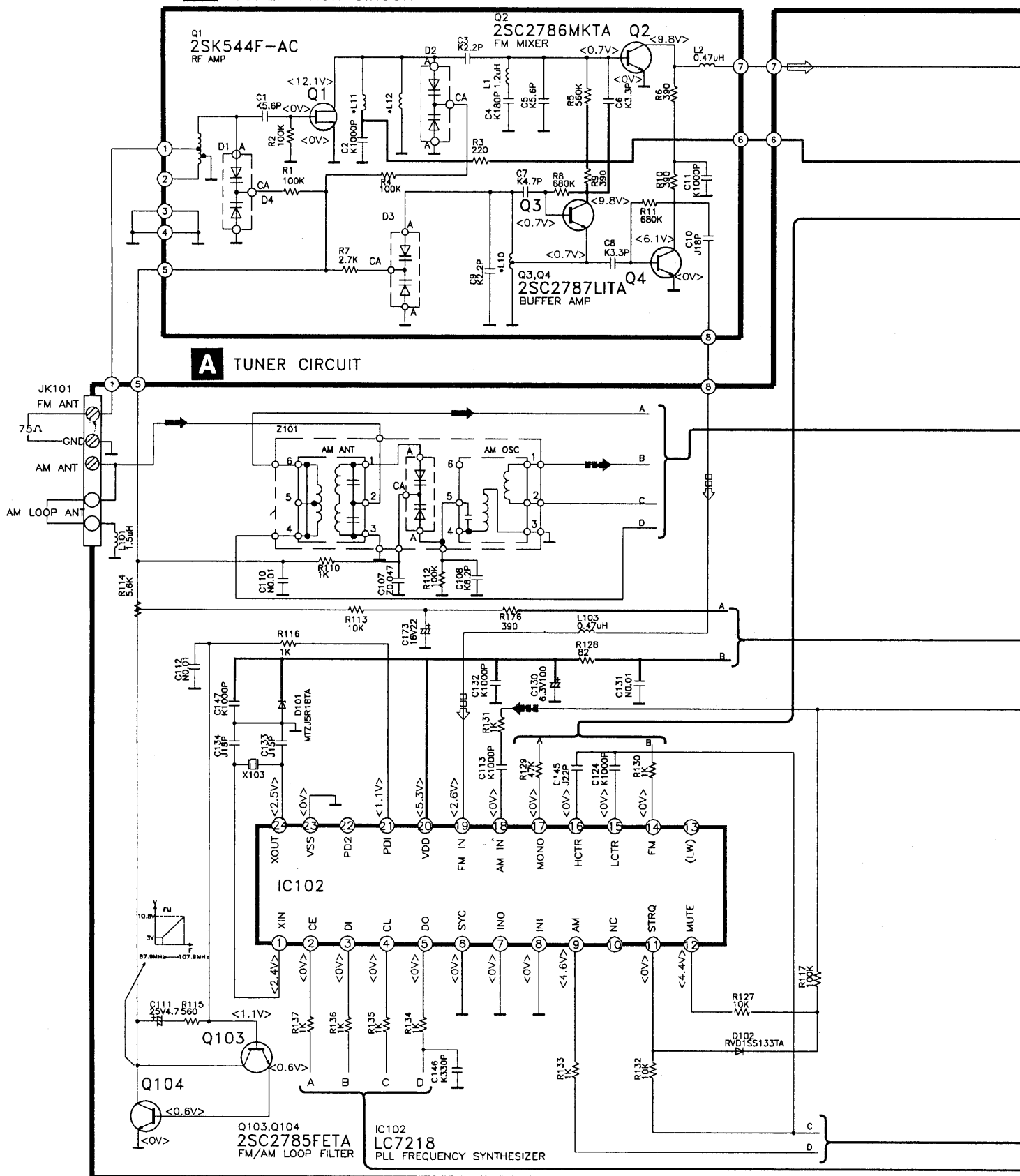


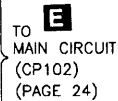
Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé.

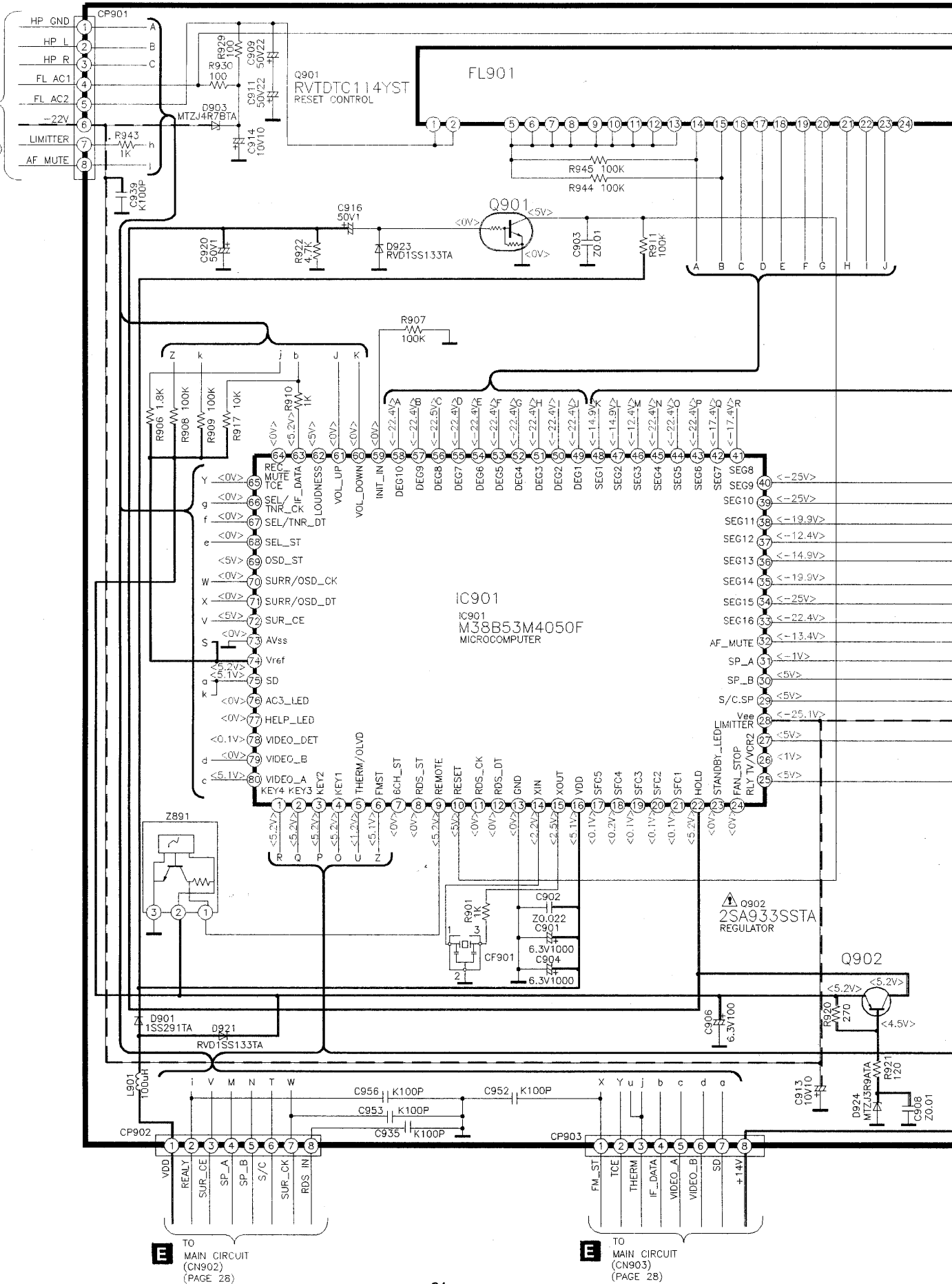
Schematic Diagram

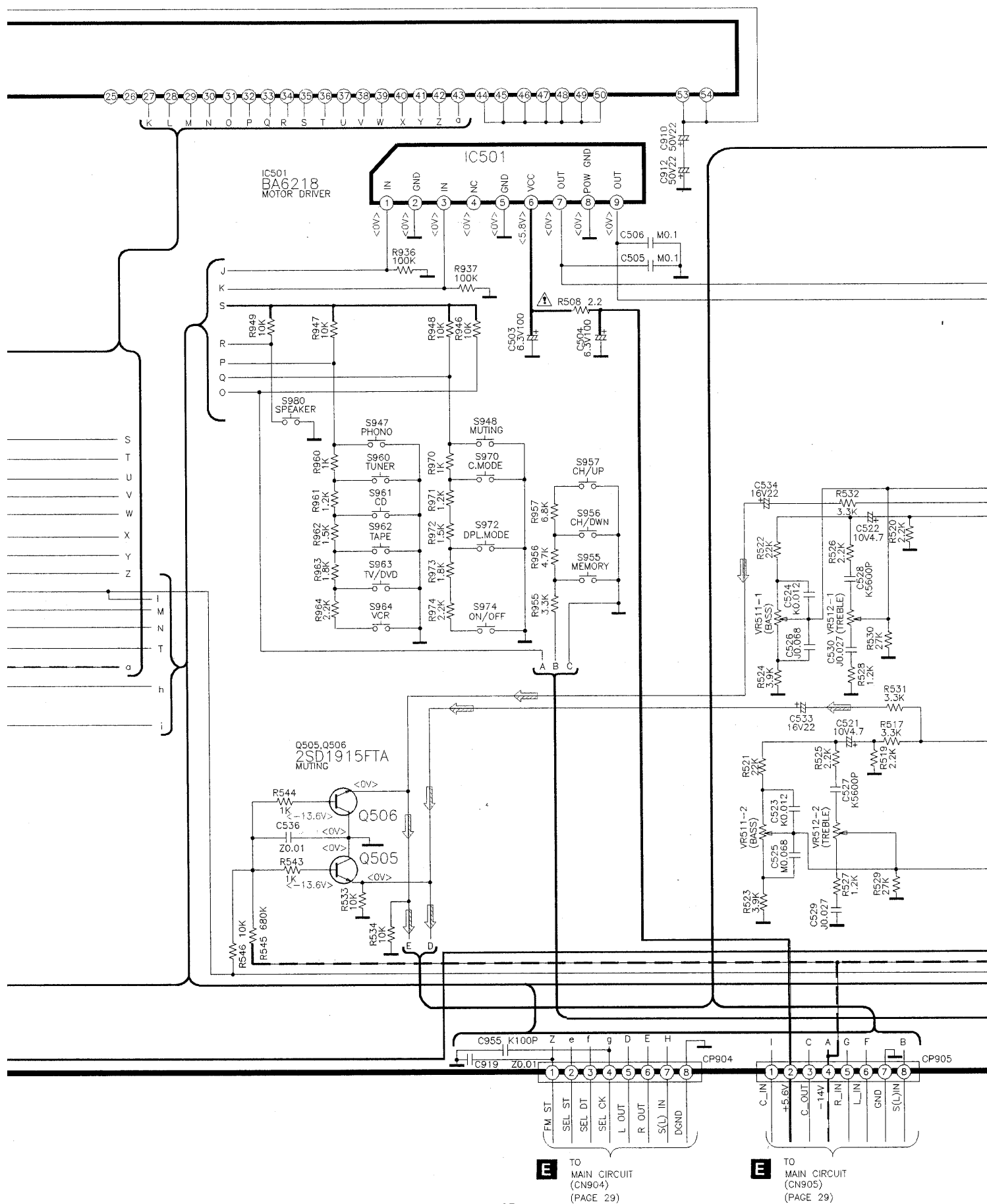
J

TUNER PACK CIRCUIT

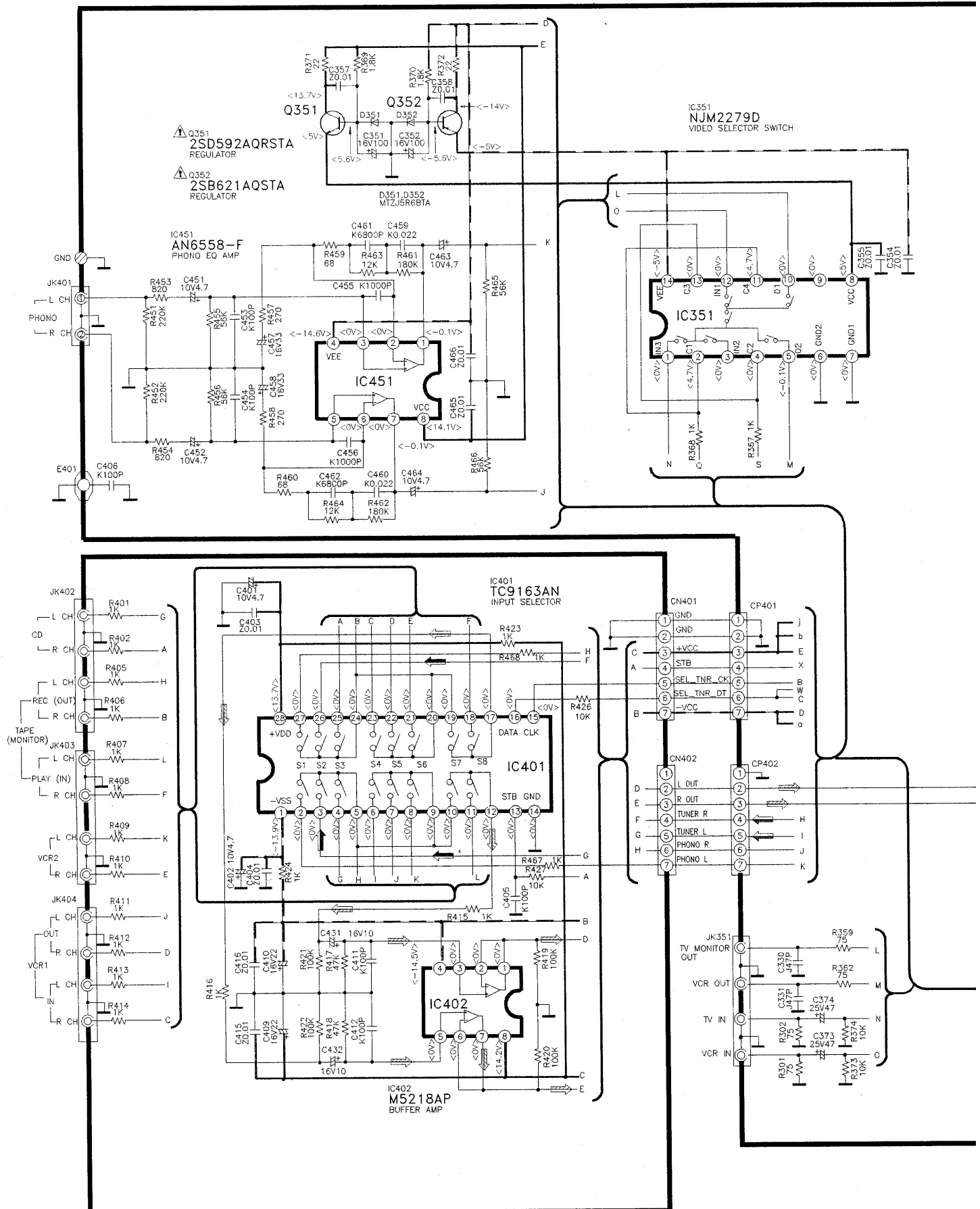




B PANEL CIRCUIT**E**
TO
MAIN
CIRCUIT
(CN901)
(PAGE 29)

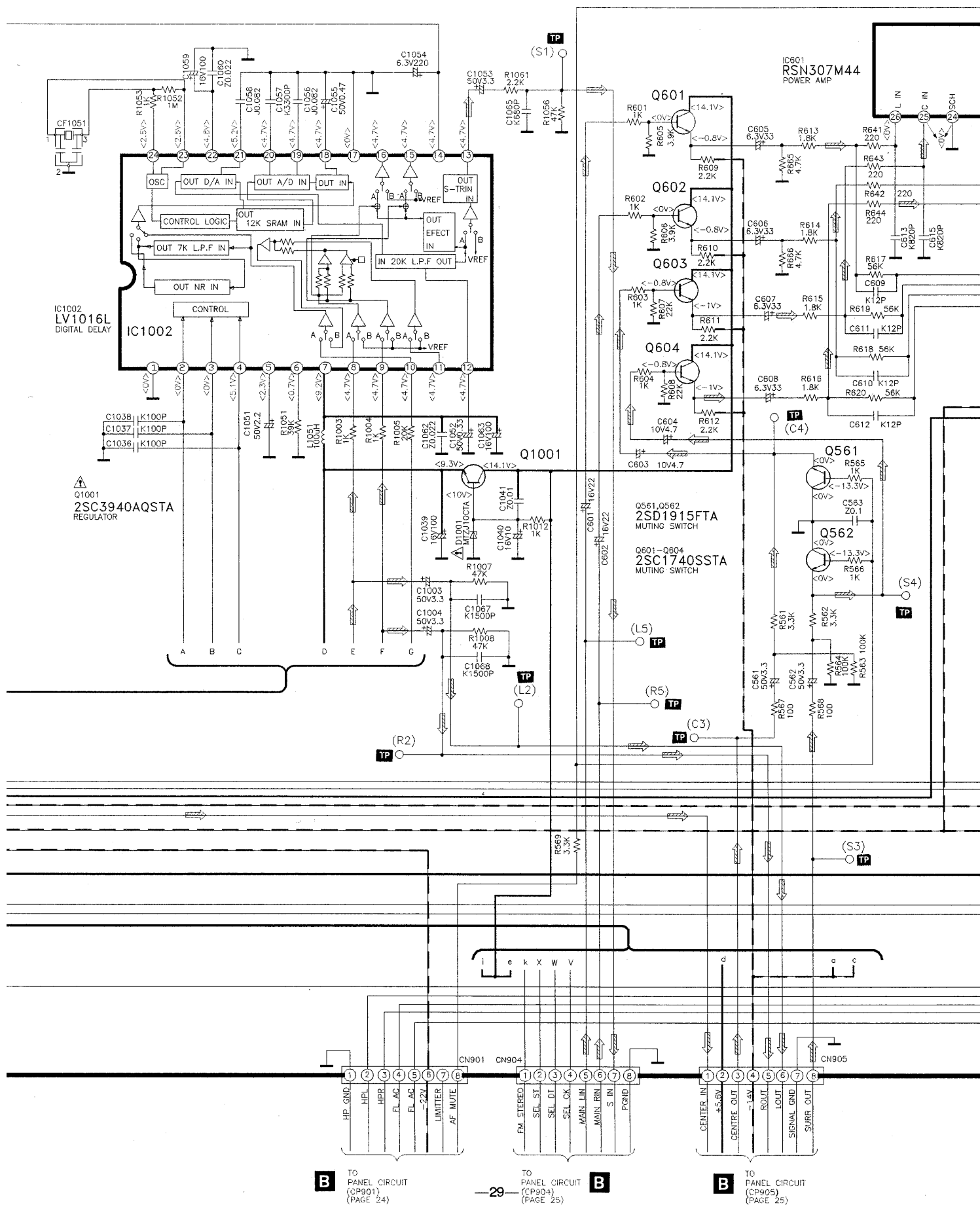


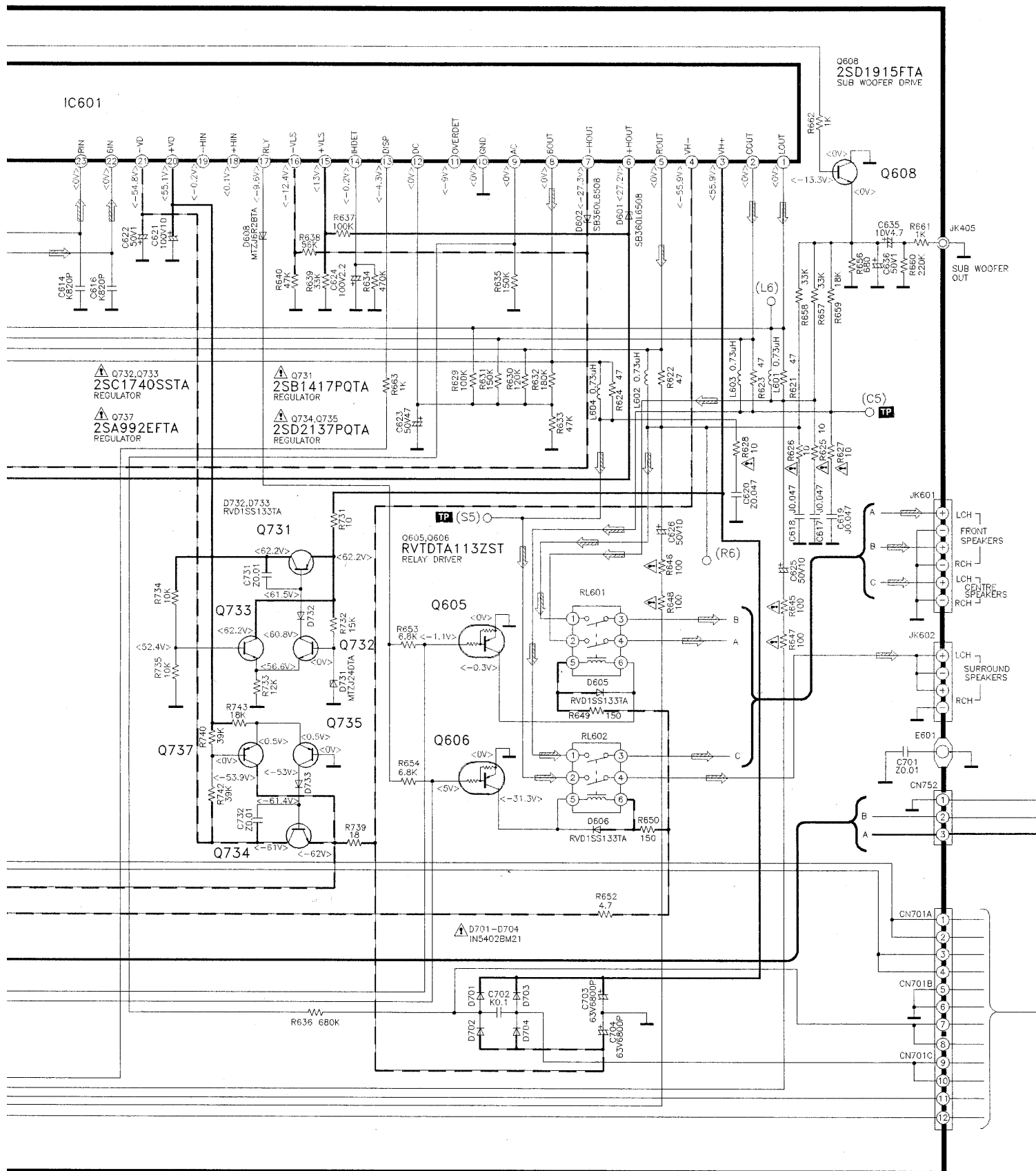
E MAIN CIRCUIT



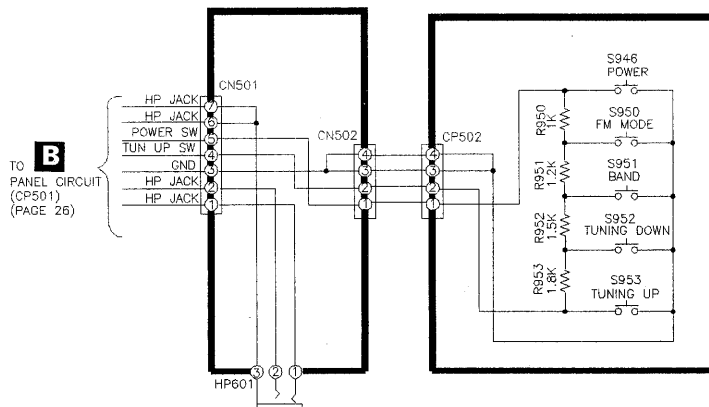
I IN/OUT TERMINAL CIRCUIT



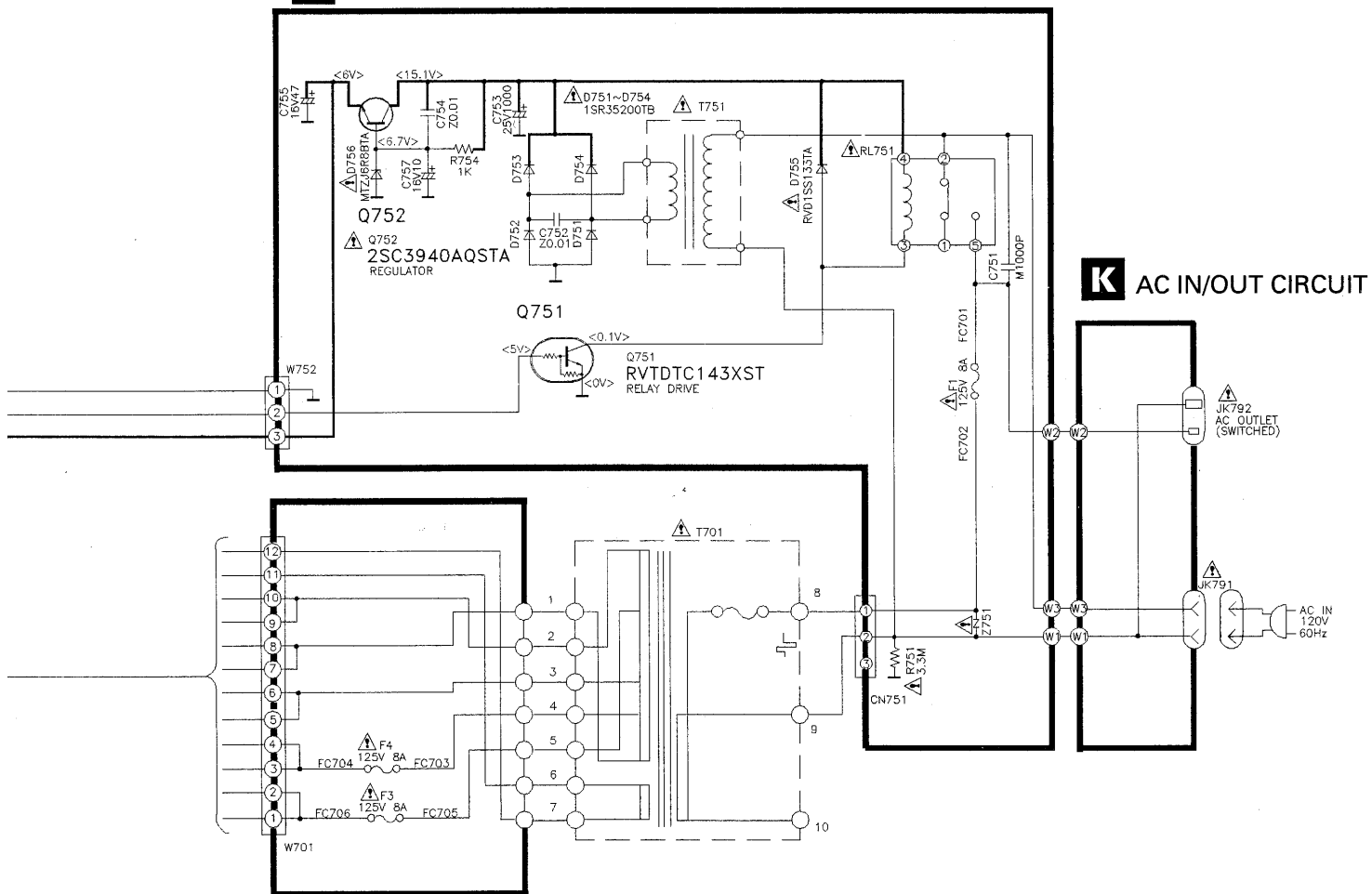




D HEADPHONE JACK CIRCUIT **H** POWER SWITCH CIRCUIT



F POWER CIRCUIT



G TRANSFORMER CIRCUIT

Measurements and Adjustments

• AM-IF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	450kHz 30 % Mod. at 400 Hz	Point of non-interference.(on/ about 600kHz)	Headphone Jack (32Ω) (Fabricate the plug as shown in Fig.2 and then connect the lead wires of the plug to the measuring instrument.)	Z102 (AM IFT)	Adjust for maximum output.

• AM-RF ALIGNMENT

"	530kHz	Tuning capacitor fully closed.	"	Z101 (AM OSC Coil)	Adjust for maximum output.
"	610kHz	Tune to signal	"	Z101 (AM ANT Coil)	Adjust for maximum output.

• Alignment Points

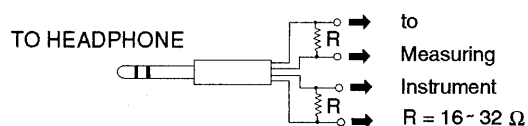


Fig. 2

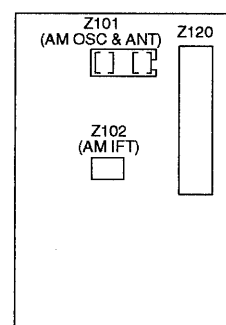
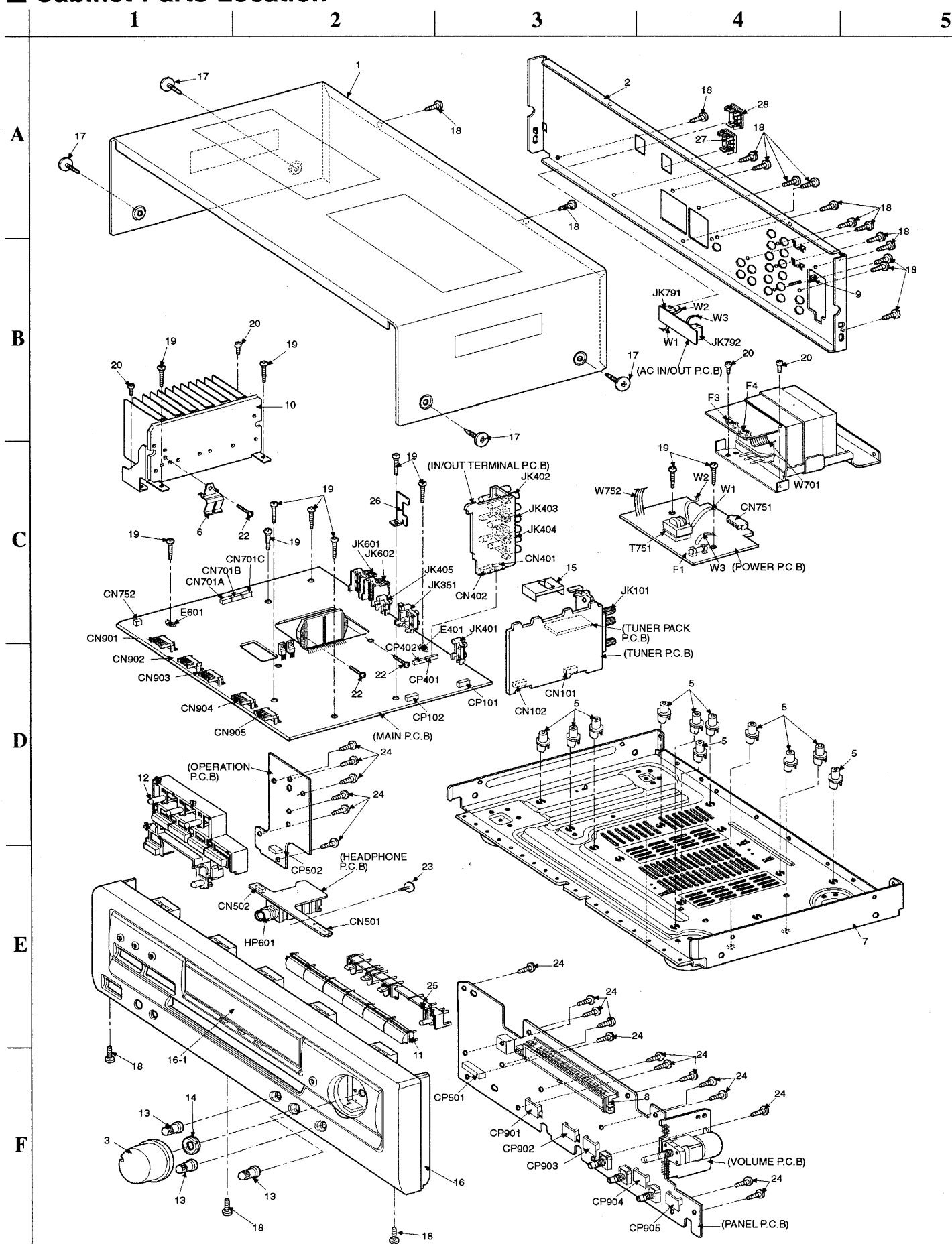


Fig. 1

Terminal Guide of ICs, Transistors and Diodes

LA2786L (42 PIN) 	LA1832A LC7218 	TC9163AN 	LV1016L 	NJM2279D
M5218AP 	AN6558F UPC4570C 	BA6218 	M38B53M4050F (65 PIN) 	RSN307M44-P
2SB1548PQAU 2SD2374PQAU 	2SC3311ARTA 	2SD592AQRSTA 2SA992EFTA 2SB621AQSTA 	2SA933SSTA 2SC1740SSTA RVTDTTC114YST 	2SK544F-AC
2SC3940AQSTA 	2SB1417PQTA 2SD2137PQTA 	SVC211SPA-AL 	1N5402BM21 	SB360L6508
1SR35200TB 1SS291TA RVD1SS133TA 	2SC2785FETA 2SC2786MTA 2SC2787FL1TA 2SC2787LTA 2SD1915FTA RVTDTTC143XST 	RVTDTA113ZST UN411FTA 	MTZJ10CTA MTZJ15CTA MTZJ24DTA MTZJ27DTA MTZJ3R9ATA MTZJ4R7BTA 	MTZJ5R1BTA MTZJ5R6BTA MTZJ6R2BTA MTZJ6R8BTA MTZJ7R5CTA

Cabinet Parts Location



Replacement Parts List

Notes: • Important safety notice :

 Components identified by Δ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indication can be used for all areas.

- [M] in Remarks column indicates parts that are supplied by MESA.

- Remote Control Unit : Supply period for three years from terminal of production.

- The "(SF)" mark denotes the standard part.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		IC601	RSN307M44	IC, HIC	[M]	Q733	2SC1740SSTA	TRANSISTOR	Δ [M]
1	RKM0260C-K	CABINET	[M]	IC901	M38B53M4050F	IC, MICROCOMPUTER	[M]	Q734	2SD2137PQTA	TRANSISTOR	Δ [M]
2	RGR0251A-A	REAR PANEL	[M]	IC1001	LA2786L	IC, DPL	[M]	Q735	2SA992EFTA	TRANSISTOR	Δ [M]
2	RGR0251A-B	REAR PANEL	[M]	IC1002	LV1016L	IC, SURR DECODER	[M]	Q737	2SA992EFTA	TRANSISTOR	Δ [M]
3	RGW0243A-K	VOLUME KNOB	[M]					Q751	RVTDT143XST	TRANSISTOR	[M]
5	RKQ0089	PCB HOLDER	[M]			TRANSISTORS		Q752	2SC3940AQSTA	TRANSISTOR	Δ [M]
6	RMC0158-S	TRANSISTOR HOLDER	[M]	Q1	2SK544F-AC	TRANSISTOR	[M]	Q901	RVTDT114YST	TRANSISTOR	Δ [M]
7	RFKJEX310PK	BOTTOM CHASSIS ASSY	[M]	Q2	2SC2786MTA	TRANSISTOR	[M]	Q902	2SA933SSTA	TRANSISTOR	Δ [M]
8	RMN0372	FL HOLDER	[M]	Q3	2SC2787FL1TA	TRANSISTOR	[M]	Q1001	2SC3940AQSTA	TRANSISTOR	Δ [M]
9	SNE2123	EARTH TERMINAL	[M]	Q4	2SC2787FL1TA	TRANSISTOR	[M]				
10	RXX0181	HEAT SINK UNIT	[M]	Q101	2SC2787LTA	TRANSISTOR	[M]			DIODES	
11	RGU1493-K	SELECTOR BUTTON	[M]	Q103	2SC2785FETA	TRANSISTOR	[M]	D1	SVC211SPA-AL	DIODE	[M]
12	RGU1350-K	MODE BUTTON	[M]	Q104	2SC2785FETA	TRANSISTOR	[M]	D2	SVC211SPA-AL	DIODE	[M]
13	RGW0244-K1	BASS TREBLE KNOB	[M]	Q106	UN411FTA	TRANSISTOR	[M]	D3	SVC211SPA-AL	DIODE	[M]
14	RHN90001	M9 NUT	[M]	Q107	2SC3311ARTA	TRANSISTOR	[M]	D101	MTZJ5R1BTA	DIODE	[M]
15	RSC0027-1	SHIELD CASE	[M]	Q108	2SC3311ARTA	TRANSISTOR	[M]	D102	RVD1SS133TA	DIODE	[M]
16	RFKJEX310PK	FRONT PANEL ASSY	[M]	Q351	2SD592AQRSTA	TRANSISTOR	Δ [M]	D351	MTZJ5R6BTA	DIODE	[M]
16-1	RKW0436C-Q	FL WINDOW	[M]	Q352	2SB621AQSTA	TRANSISTOR	Δ [M]	D352	MTZJ5R6BTA	DIODE	[M]
17	SNE2129-1	SCREW (CABINET)	[M]	Q505	2SD1915FTA	TRANSISTOR	[M]	D401	MTZJ7R5CTA	DIODE	[M]
18	XTBS3+8JFZ1	SCREW (REAR PANEL)	[M]	Q506	2SD1915FTA	TRANSISTOR	[M]	D601	SB360L6508	DIODE	[M]
19	XTB3+20JFZ	SCREW (MAIN PCB)	[M]	Q561	2SD1915FTA	TRANSISTOR	[M]	D602	SB360L6508	DIODE	[M]
20	XTB3+8FFZ	SCREW (TRNFM HSINK)	[M]	Q562	2SD1915FTA	TRANSISTOR	[M]	D605	RVD1SS133TA	DIODE	[M]
22	XTW3+15T	SCREW (HIC/FIXTURE)	[M]	Q601	2SC1740SSTA	TRANSISTOR	[M]	D606	RVD1SS133TA	DIODE	[M]
23	RHD26016	SCREW (HD,PHONE)	[M]	Q602	2SC1740SSTA	TRANSISTOR	[M]	D608	MTZJ6R2BTA	DIODE	[M]
24	XTBS26+10J	SCREW (FRONT PANEL)	[M]	Q603	2SC1740SSTA	TRANSISTOR	[M]	D701	1N5402BM21	DIODE	Δ [M]
25	RGU1352A-K	DOLBY BUTTON	[M]	Q604	2SC1740SSTA	TRANSISTOR	[M]	D702	1N5402BM21	DIODE	Δ [M]
26	RMQ0709	TUNER PCB BRACKET	[M]	Q605	RVTDTA113ZST	TRANSISTOR	[M]	D703	1N5402BM21	DIODE	Δ [M]
27	SJS9233A	AC OUTLET COVER	[M]	Q606	RVTDTA113ZST	TRANSISTOR	[M]	D704	1N5402BM21	DIODE	Δ [M]
28	SJS9234A	AC INLET COVER	[M]	Q608	2SD1915FTA	TRANSISTOR	[M]	D705	MTZJ6R2BTA	DIODE	Δ [M]
				Q681	2SD1915FTA	TRANSISTOR	[M]	D707	MTZJ27DTA	DIODE	Δ [M]
		INTEGRATED CIRCUITS		Q682	2SD1915FTA	TRANSISTOR	[M]	D708	MTZJ15CTA	DIODE	Δ [M]
IC101	LA1832A	IC, IF/MPX	[M]	Q701	2SD2374PQAU	TRANSISTOR	Δ [M]	D721	1N5402BM21	DIODE	Δ [M]
IC102	LC7218	IC, PLL	[M]	Q703	2SC1740SSTA	TRANSISTOR	Δ [M]	D722	1N5402BM21	DIODE	Δ [M]
IC351	NJM2279D	IC, VIDEO SELECTOR SW	[M]	Q704	2SC1740SSTA	TRANSISTOR	Δ [M]	D723	1N5402BM21	DIODE	Δ [M]
IC401	TC9183AN	IC, SELECTOR	[M]	Q705	2SC1740SSTA	TRANSISTOR	Δ [M]	D724	1N5402BM21	DIODE	Δ [M]
IC402	M5218AP	IC, BUFFER AMP	[M]	Q706	2SC3940AQSTA	TRANSISTOR	[M]	D731	MTZJ24DTA	DIODE	[M]
IC451	AN6558F	IC, OP AMP	[M]	Q707	2SB621AQSTA	TRANSISTOR	Δ [M]	D732	RVD1SS133TA	DIODE	[M]
IC501	BA6218	IC, MOTOR DRIVER	[M]	Q708	2SB1548PQAU	TRANSISTOR	Δ [M]	D733	RVD1SS133TA	DIODE	[M]
IC511	UPC4570C	IC, TONE CONTROL	[M]	Q731	2SB1417PQTA	TRANSISTOR	Δ [M]	D751	1SR35200TB	DIODE	Δ [M]
IC551	UPC4570C	IC, TONE CONTROL	[M]	Q732	2SC1740SSTA	TRANSISTOR	Δ [M]	D752	1SR35200TB	DIODE	Δ [M]

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
D753	1SR35200TB	DIODE	△ [M]	CN752	RJS1A6603	3P TAPING CONNECTOR	[M]	X102	RLFDGTD01I	FM REZONATOR	[M]
D754	1SR35200TB	DIODE	△ [M]	CN901	RJU003K008M1	BOAD IN CONNECTOR	[M]	X103	SVQ49U722T-S	CRYSTAL 7.2MHZ	[M]
D755	RVD1SS133TA	DIODE	△ [M]	CN902	RJU003K008M1	BOAD IN CONNECTOR	[M]			DISPLAY TUBE	
D756	MTZJ6R8BTA	DIODE	△ [M]	CN903	RJU003K008M1	BOAD IN CONNECTOR	[M]	FL901	RSL0233-F	FL	[M]
D901	1SS291TA	DIODE	[M]	CN904	RJU003K008M1	BOAD IN CONNECTOR	[M]			FUSES	
D903	MTZJ4R7BTA	DIODE	[M]	CN905	RJU003K008M1	BOAD IN CONNECTOR	[M]	F1	XBA1C50NBAL	FUSE	△ [M]
D921	RVD1SS133TA	DIODE	[M]	CP101	RJT057W007-1	7P CONNECTOR	[M]	F3	XBA1C80NBAL	FUSE	△ [M]
D923	RVD1SS133TA	DIODE	[M]	CP102	RJT057W007-1	7P CONNECTOR	[M]	F4	XBA1C80NBAL	FUSE	△ [M]
D924	MTZJ3R9ATA	DIODE	[M]	CP401	RJT100W07	7P CONNECTOR	[M]			FUSE HOLDERS	
D1001	MTZJ10CTA	DIODE	△ [M]	CP402	RJT100W07	7P CONNECTOR	[M]	FC701	EYF52BC	FUSE HOLDER	[M]
		VARIABLE RESISTORS		CP501	RJT100W07	7P CONNECTOR	[M]	FC702	EYF52BC	FUSE HOLDER	[M]
VR501	ELWMPH026B15	MOTOR VR	[M]	CP502	RJT100W04	4P CONNECTOR	[M]	FC703	EYF52BC	FUSE HOLDER	[M]
VR502	EVJ02QF01G15	BALANCE CONTROL VR	[M]	CP901	RJT003K008M1	8P CONNECTOR	[M]	FC704	EYF52BC	FUSE HOLDER	[M]
VR511	EVJYA1F01C15	TONE CONTROL VR	[M]	CP902	RJT003K008M1	8P CONNECTOR	[M]	FC705	EYF52BC	FUSE HOLDER	[M]
VR512	EVJYA1F01C15	TONE CONTROL VR	[M]	CP903	RJT003K008M1	8P CONNECTOR	[M]	FC706	EYF52BC	FUSE HOLDER	[M]
		SWITCHES		CP904	RJT003K008M1	8P CONNECTOR	[M]				
S946	EVQ21405R	SW, POWER	[M]	CP905	RJT003K008M1	8P CONNECTOR	[M]			JACKS	
S947	EVQ21405R	SW, PHONO	[M]			COILS & TRANSFORMERS		JK101	RJH4405	ANT TERMINAL	[M]
S948	EVQ21405R	SW, MUTING	[M]	L1	RLQZP1R2JT-Y	RF CHOKE COIL	[M]	JK351	SJF3069-3N	RCA PIN JACK	[M]
S950	EVQ21405R	SW, FM MODE	[M]	L2	RLQZP47KT-Y	RF CHOKE COIL	[M]	JK401	SJF3068-7N	RCA TERMINAL	[M]
S951	EVQ21405R	SW, BAND	[M]	L101	ELESN1R5MA	CHOKE COIL	[M]	JK402	SJF3069N	LINE IN JACK	[M]
S952	EVQ21405R	SW, TUNING DOWN	[M]	L103	ELEXTR47MA9	CHOKE COIL	[M]	JK403	SJF3069N	LINE IN JACK	[M]
S953	EVQ21405R	SW, TUNING UP	[M]	L501	RLQZP1R0KT-Y	AXIAL COIL	[M]	JK404	SJF3069N	LINE IN JACK	[M]
S955	EVQ21405R	SW, MEMO	[M]	L502	RLQZP1R0KT-Y	AXIAL COIL	[M]	JK405	SJFD7	FM MULTI OUT	[M]
S956	EVQ21405R	SW, CH/DOWN	[M]	L601	RLQYR73M	CHOKE COIL	[M]	JK601	RJH5601	SP TERMINAL	[M]
S957	EVQ21405R	SW, CH/UP	[M]	L602	RLQYR73M	CHOKE COIL	[M]	JK602	RJR0054	SP TERMINAL	[M]
S960	EVQ21405R	SW, TUNER	[M]	L603	RLQYR73M	CHOKE COIL	[M]	JK791	SJS9234B	AC INLET	△ [M]
S961	EVQ21405R	SW, CD	[M]	L604	RLQYR73M	CHOKE COIL	[M]	JK792	SJS9233B	AC OUTLET	△ [M]
S962	EVQ21405R	SW, TAPE	[M]	L751	ELESN101KA	CHOKE COIL	[M]			WIRE	
S963	EVQ21405R	SW, TV/DVD	[M]	L901	RLQB101KTA-Y	CHOKE COIL	[M]	W1	REE0769	WIRE UNIT	[M]
S964	EVQ21405R	SW, VCR	[M]	L1051	ELESN101KA	CHOKE COIL	[M]	W2	REE0770	WIRE UNIT	[M]
S970	EVQ21405R	SW, Center mode	[M]	T701	RTP2N5C008	POWER TRANSFORMER	△ [M]	W3	REE0771	WIRE UNIT	[M]
S972	EVQ21405R	SW, DPL.MODE	[M]	T751	RTP1H5C001-V	POWER TRANSFORMER(S)	△ [M]			RELAYS	
S974	EVQ21405R	SW, SURR. ON/OFF	[M]			COMPONENT COMBINATIONS		RL601	RSY0013M-0	RELAY	[M]
S980	EVQ21405R	SW, SPEAKER	[M]	Z101	RLA2Z002M-T	AM ANT. COIL	[M]	RL602	RSY0013M-0	RELAY	[M]
		CONNECTORS		Z102	RLI2Z006M-T	AM IFT	[M]	RL751	RSY0019M-0	12V TV-5 RELAY	△ [M]
CN101	RJU057W007	7P CONNECTOR	[M]	Z751	ERZV10V511CS	ZNR	△ [M]			HEADPHONE	
CN102	RJU057W007	7P CONNECTOR	[M]	Z891	RCDSPS4242N	REMOTE SENSOR	[M]	HP601	RJJ63TS01	HEADPHONES JACK	[M]
CN401	RJU100W07	7P CONNECTOR	[M]			CERAMIC FILTERS				EARTH TERMINALS	
CN402	RJU100W07	7P CONNECTOR	[M]	CF201	RLFFETMGD01L	CERAMIC FILTER	[M]	E401	SNE1004-2	EARTH TERMINAL	[M]
CN501	RJU100W07	7P CONNECTOR	[M]	CF202	RLFFETMGD01L	CERAMIC FILTER	[M]	E601	SNE1004-2	EARTH TERMINAL	[M]
CN502	RJU100W04	4P CONNECTOR	[M]	CF901	RVCST4R00MT	CERAMIC OSCILLATOR	[M]				
CN701A	RJS1A6604	4P TAPING CONNECTOR	[M]	CF1051	EF0EC8004T4	CERAMIC OSCILLATOR	[M]				
CN701B	RJS1A6604	4P TAPING CONNECTOR	[M]			OSCILLATORS					
CN701C	RJS1A6604	4P TAPING CONNECTOR	[M]	X101	RSXZ456KM07M	CERAMIC OSCILLATOR	[M]				
CN751	SJS305-1	3P CONNECTOR	[M]								

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS		P5	SPB1061	BAG	[M]	A2	RSA0010	LOOP ANT UNIT	[M]
P1	SPSD152	ACCESSORY BOX	[M]					A3	SJA172	AC CORD	[M]
P2	RPG3290	PACKING CASE	[M]			ACCESSORIES		A4	RFKSEX310PK	O/I BOOK ASS'Y	[M]
P3	RPN0865	POLYFOAM	[M]	A1	EUR644347	REMOTE CONTROL UNIT	[M]	A5	RFKSEX310PK	O/I BOOK ASS'Y	[M]
P4	RPF0005	MIRAMAT BAG	[M]	A1-1	UR64EC1822	REM.CON BATT/COVER	[M]	A6	ISA0006	FM ANTENNA WIRE	[M]

Resistors & Capacitors

Notes : • Important safety notice:

Components identified by Δ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- Capacitor values are in microfarad (μ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
- Resistors values are in ohms, unless specified otherwise, 1K=1,000(OHM), 1M=1,000K(OHM)
- [M] in Remarks column indicates parts that are supplied by MESA.

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
	RESISTORS										
R1	ERDS2TJ104T	100K 1/4W [M]	R130	ERDS2TJ102T	1K 1/4W [M]	R374	ERDS2TJ103T	10K 1/4W [M]	R456	ERDS2TJ563T	56K 1/4W [M]
R2	ERDS2TJ104T	100K 1/4W [M]	R131	ERDS2TJ102T	1K 1/4W [M]	R401	ERDS2TJ102T	1K 1/4W [M]	R457	ERDS2TJ271T	270 1/4W [M]
R3	ERDS2TJ221T	220 1/4W [M]	R132	ERDS2TJ103T	10K 1/4W [M]	R402	ERDS2TJ102T	1K 1/4W [M]	R458	ERDS2TJ271T	270 1/4W [M]
R4	ERDS2TJ104T	100K 1/4W [M]	R133	ERDS2TJ102T	1K 1/4W [M]	R405	ERDS2TJ102T	1K 1/4W [M]	R459	ERDS2TJ680T	68 1/4W [M]
R5	ERDS2TJ564T	560K 1/4W [M]	R134	ERDS2TJ102T	1K 1/4W [M]	R406	ERDS2TJ102T	1K 1/4W [M]	R460	ERDS2TJ680T	68 1/4W [M]
R6	ERDS2TJ391T	390 1/4W [M]	R135	ERDS2TJ102T	1K 1/4W [M]	R407	ERDS2TJ102T	1K 1/4W [M]	R461	ERDS2TJ184T	180K 1/4W [M]
R7	ERDS2TJ272T	2.7K 1/4W [M]	R136	ERDS2TJ102T	1K 1/4W [M]	R408	ERDS2TJ102T	1K 1/4W [M]	R462	ERDS2TJ184T	180K 1/4W [M]
R8	ERDS2TJ684T	680K 1/4W [M]	R137	ERDS2TJ102T	1K 1/4W [M]	R409	ERDS2TJ102T	1K 1/4W [M]	R463	ERDS2TJ123T	12K 1/4W [M]
R9	ERDS2TJ391T	390 1/4W [M]	R139	ERDS2TJ272T	2.7K 1/4W [M]	R410	ERDS2TJ102T	1K 1/4W [M]	R464	ERDS2TJ123T	12K 1/4W [M]
R10	ERDS2TJ391T	390 1/4W [M]	R140	ERDS2TJ272T	2.7K 1/4W [M]	R411	ERDS2TJ102T	1K 1/4W [M]	R465	ERDS2TJ563T	56K 1/4W [M]
R11	ERDS2TJ684T	680K 1/4W [M]	R141	ERDS2TJ103T	10K 1/4W [M]	R412	ERDS2TJ102T	1K 1/4W [M]	R466	ERDS2TJ563T	56K 1/4W [M]
R103	ERDS2TJ151T	150 1/4W [M]	R142	ERDS2TJ103T	10K 1/4W [M]	R413	ERDS2TJ102T	1K 1/4W [M]	R467	ERDS2TJ102T	1K 1/4W [M]
R104	ERDS2TJ102T	1K 1/4W [M]	R143	ERDS2TJ222T	2.2K 1/4W [M]	R414	ERDS2TJ102T	1K 1/4W [M]	R468	ERDS2TJ102T	1K 1/4W [M]
R105	ERDS2TJ471T	470 1/4W [M]	R144	ERDS2TJ222T	2.2K 1/4W [M]	R415	ERDS2TJ102T	1K 1/4W [M]	R501	ERDS2TJ222T	2.2K 1/4W [M]
R106	ERDS2TJ224T	220K 1/4W [M]	R145	ERDS2TJ102T	1K 1/4W [M]	R416	ERDS2TJ102T	1K 1/4W [M]	R502	ERDS2TJ222T	2.2K 1/4W [M]
R107	ERDS2TJ471T	470 1/4W [M]	R146	ERDS2TJ102T	1K 1/4W [M]	R417	ERDS2TJ473T	47K 1/4W [M]	R503	ERDS2TJ103T	10K 1/4W [M]
R110	ERDS2TJ102T	1K 1/4W [M]	R147	ERDS2TJ474T	470K 1/4W [M]	R418	ERDS2TJ473T	47K 1/4W [M]	R504	ERDS2TJ103T	10K 1/4W [M]
R112	ERDS2TJ104T	100K 1/4W [M]	R148	ERDS2TJ474T	470K 1/4W [M]	R419	ERDS2TJ104T	100K 1/4W [M]	R505	ERDS2TJ103T	10K 1/4W [M]
R113	ERDS2TJ103T	10K 1/4W [M]	R149	ERDS2TJ680T	68 1/4W [M]	R420	ERDS2TJ104T	100K 1/4W [M]	R506	ERDS2TJ103T	10K 1/4W [M]
R114	ERDS2TJ562T	5.6K 1/4W [M]	R171	ERDS2TJ102T	1K 1/4W [M]	R421	ERDS2TJ104T	100K 1/4W [M]	R508	ERDS1FVJ2P2T	2.2 1/2W Δ [M]
R115	ERDS2TJ561T	560 1/4W [M]	R172	ERDS2TJ102T	1K 1/4W [M]	R422	ERDS2TJ104T	100K 1/4W [M]	R511	ERDS2TJ471T	470 1/4W [M]
R116	ERDS2TJ102T	1K 1/4W [M]	R173	ERDS2TJ471T	470 1/4W [M]	R423	ERDS2TJ102T	1K 1/4W [M]	R512	ERDS2TJ471T	470 1/4W [M]
R117	ERDS2TJ104T	100K 1/4W [M]	R175	ERDS2TJ102T	1K 1/4W [M]	R424	ERDS2TJ102T	1K 1/4W [M]	R513	ERDS2TJ474T	470K 1/4W [M]
R118	ERDS2TJ562T	5.6K 1/4W [M]	R176	ERDS2TJ391T	390 1/4W [M]	R425	ERDS2TJ103T	10K 1/4W [M]	R514	ERDS2TJ474T	470K 1/4W [M]
R119	ERDS2TJ822T	8.2K 1/4W [M]	R301	ERDS2TJ750T	75 1/4W [M]	R426	ERDS2TJ103T	10K 1/4W [M]	R515	ERDS2TJ474T	470K 1/4W [M]
R120	ERDS2TJ473T	47K 1/4W [M]	R302	ERDS2TJ750T	75 1/4W [M]	R427	ERDS2TJ103T	10K 1/4W [M]	R516	ERDS2TJ474T	470K 1/4W [M]
R121	ERDS2TJ332T	3.3K 1/4W [M]	R359	ERDS2TJ750T	75 1/4W [M]	R440	ERDS1FVJ820T	82 1/2W Δ [M]	R517	ERDS2TJ332T	3.3K 1/4W [M]
R122	ERDS2TJ272T	2.7K 1/4W [M]	R362	ERDS2TJ750T	75 1/4W [M]	R441	ERDS2TJ473T	47K 1/4W [M]	R518	ERDS2TJ332T	3.3K 1/4W [M]
R124	ERDS2TJ271T	270 1/4W [M]	R367	ERDS2TJ102T	1K 1/4W [M]	R442	ERDS2TJ473T	47K 1/4W [M]	R519	ERDS2TJ222T	2.2K 1/4W [M]
R125	ERDS2TJ472T	4.7K 1/4W [M]	R368	ERDS2TJ102T	1K 1/4W [M]	R443	ERDS2TJ330T	33 1/4W [M]	R520	ERDS2TJ222T	2.2K 1/4W [M]
R126	ERDS2TJ472T	4.7K 1/4W [M]	R369	ERDS2TJ182T	1.8K 1/4W [M]	R451	ERDS2TJ224T	220K 1/4W [M]	R521	ERDS2TJ223T	22K 1/4W [M]
R127	ERDS2TJ103T	10K 1/4W [M]	R370	ERDS2TJ182T	1.8K 1/4W [M]	R452	ERDS2TJ224T	220K 1/4W [M]	R522	ERDS2TJ223T	22K 1/4W [M]
R128	ERDS2TJ820T	82 1/4W [M]	R371	ERD2FCVG220T	22 1/4W [M]	R453	ERDS2TJ821T	820 1/4W [M]	R523	ERDS2TJ392T	3.9K 1/4W [M]
R129	ERDS2TJ473T	47K 1/4W [M]	R372	ERD2FCVG220T	22 1/4W [M]	R454	ERDS2TJ821T	820 1/4W [M]	R524	ERDS2TJ392T	3.9K 1/4W [M]
			R373	ERDS2TJ103T	10K 1/4W [M]	R455	ERDS2TJ563T	56K 1/4W [M]	R525	ERDS2TJ222T	2.2K 1/4W [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
R526	ERDS2TJ222T	2.2K 1/4W [M]	R619	ERDS2TJ563T	56K 1/4W [M]	R684	ERDS2TJ270T	27 1/4W [M]	R910	ERDS2TJ102T	1K 1/4W [M]
R527	ERDS2TJ122T	1.2K 1/4W [M]	R620	ERDS2TJ563T	56K 1/4W [M]	R685	ERDS2TJ270T	27 1/4W [M]	R911	ERDS2TJ104T	100K 1/4W [M]
R528	ERDS2TJ122T	1.2K 1/4W [M]	R621	ERDS2TJ470T	47 1/4W [M]	R686	ERDS2TJ270T	27 1/4W [M]	R917	ERDS2TJ103T	10K 1/4W [M]
R529	ERDS2TJ273T	27K 1/4W [M]	R622	ERDS2TJ470T	47 1/4W [M]	R687	ERDS2TJ270T	27 1/4W [M]	R920	ERDS2TJ271T	270 1/4W [M]
R530	ERDS2TJ273T	27K 1/4W [M]	R623	ERDS2TJ470T	47 1/4W [M]	R688	ERDS2TJ270T	27 1/4W [M]	R921	ERDS2TJ121T	120 1/4W [M]
R531	ERDS2TJ332T	3.3K 1/4W [M]	R624	ERDS2TJ470T	47 1/4W [M]	R689	ERDS2TJ270T	27 1/4W [M]	R922	ERDS2TJ472T	4.7K 1/4W [M]
R532	ERDS2TJ332T	3.3K 1/4W [M]	R625	ERDS1FVJ100T	10 1/2W△ [M]	R690	ERDS2TJ270T	27 1/4W [M]	R929	ERDS2TJ101T	100 1/4W [M]
R533	ERDS2TJ103T	10K 1/4W [M]	R626	ERDS1FVJ100T	10 1/2W△ [M]	R691	ERDS2TJ270T	27 1/4W [M]	R930	ERDS2TJ101T	100 1/4W [M]
R534	ERDS2TJ103T	10K 1/4W [M]	R627	ERDS1FVJ100T	10 1/2W△ [M]	R692	ERDS2TJ270T	27 1/4W [M]	R936	ERDS2TJ104T	100K 1/4W [M]
R543	ERDS2TJ102T	1K 1/4W [M]	R628	ERDS1FVJ100T	10 1/2W△ [M]	R693	ERDS2TJ270T	27 1/4W [M]	R937	ERDS2TJ104T	100K 1/4W [M]
R544	ERDS2TJ102T	1K 1/4W [M]	R629	ERDS2TJ104T	100K 1/4W [M]	R694	ERDS2TJ270T	27 1/4W [M]	R943	ERDS2TJ102T	1K 1/4W [M]
R545	ERDS2TJ684T	680K 1/4W [M]	R630	ERDS2TJ124T	120K 1/4W [M]	R695	ERDS2TJ102T	1K 1/4W [M]	R944	ERDS2TJ104T	100K 1/4W [M]
R546	ERDS2TJ103T	10K 1/4W [M]	R631	ERDS2TJ154T	150K 1/4W [M]	R696	ERDS2TJ102T	1K 1/4W [M]	R945	ERDS2TJ104T	100K 1/4W [M]
R551	ERDS2TJ102T	1K 1/4W [M]	R632	ERDS2TJ184T	180K 1/4W [M]	R699	ERDS2TJ332T	3.3K 1/4W [M]	R946	ERDS2TJ103T	10K 1/4W [M]
R552	ERDS2TJ102T	1K 1/4W [M]	R633	ERDS2TJ473T	47K 1/4W [M]	R703	ERDS1FVJ3R9T	3.9 1/2W △ [M]	R947	ERDS2TJ103T	10K 1/4W [M]
R553	ERDS2TJ104T	100K 1/4W [M]	R634	ERDS2TJ474T	470K 1/4W [M]	R704	ERDS1FVJ3R9T	3.9 1/2W △ [M]	R948	ERDS2TJ103T	10K 1/4W [M]
R554	ERDS2TJ104T	100K 1/4W [M]	R635	ERDS2TJ154T	150K 1/4W [M]	R705	ERDS2TJ472T	4.7K 1/4W [M]	R949	ERDS2TJ103T	10K 1/4W [M]
R555	ERDS2TJ223T	22K 1/4W [M]	R636	ERDS2TJ684T	680K 1/4W [M]	R706	ERDS2TJ102T	1K 1/4W [M]	R950	ERDS2TJ102T	1K 1/4W [M]
R556	ERDS2TJ223T	22K 1/4W [M]	R637	ERDS2TJ104T	100K 1/4W [M]	R707	ERD25FVJ221T	220 1/4W [M]	R951	ERDS2TJ122T	1.2K 1/4W [M]
R557	ERDS2TJ681T	680 1/4W [M]	R638	ERDS2TJ563T	56K 1/4W [M]	R708	ERDS2TJ152T	1.5K 1/4W [M]	R952	ERDS2TJ152T	1.5K 1/4W [M]
R558	ERDS2TJ102T	1K 1/4W [M]	R639	ERDS2TJ333T	33K 1/4W [M]	R709	ERDS2TJ1R5T	1.5 1/4W [M]	R953	ERDS2TJ182T	1.8K 1/4W [M]
R561	ERDS2TJ332T	3.3K 1/4W [M]	R640	ERDS2TJ473T	47K 1/4W [M]	R710	ERDS2TJ1R5T	1.5 1/4W [M]	R954	ERDS2TJ222T	2.2K 1/4W [M]
R562	ERDS2TJ332T	3.3K 1/4W [M]	R641	ERDS2TJ221T	220 1/4W [M]	R711	ERDS2TJ752T	7.5K 1/4W [M]	R955	ERDS2TJ332T	3.3K 1/4W [M]
R563	ERDS2TJ104T	100K 1/4W [M]	R642	ERDS2TJ221T	220 1/4W [M]	R712	ERDS2TJ682T	6.8K 1/4W [M]	R956	ERDS2TJ472T	4.7K 1/4W [M]
R564	ERDS2TJ104T	100K 1/4W [M]	R643	ERDS2TJ221T	220 1/4W [M]	R713	ERDS2TJ390T	39 1/4W [M]	R957	ERDS2TJ682T	6.8K 1/4W [M]
R565	ERDS2TJ102T	1K 1/4W [M]	R644	ERDS2TJ221T	220 1/4W [M]	R714	ERDS2TJ390T	39 1/4W [M]	R960	ERDS2TJ102T	1K 1/4W [M]
R566	ERDS2TJ102T	1K 1/4W [M]	R645	ERG1SJ101E	100 1W △ [M]	R721	ERDS1FVJ471T	470 1/2W△ [M]	R961	ERDS2TJ122T	1.2K 1/4W [M]
R567	ERDS2TJ101T	100 1/4W [M]	R646	ERG1SJ101E	100 1W △ [M]	R722	ERDS2TJ392T	3.9K 1/4W [M]	R962	ERDS2TJ152T	1.5K 1/4W [M]
R568	ERDS2TJ101T	100 1/4W [M]	R647	ERG1SJ101E	100 1W △ [M]	R723	ERDS1FVJ100T	10 1/2W△ [M]	R963	ERDS2TJ182T	1.8K 1/4W [M]
R569	ERDS2TJ332T	3.3K 1/4W [M]	R648	ERG1SJ101E	100 1W △ [M]	R724	ERDS1FVJ100T	10 1/2W△ [M]	R964	ERDS2TJ222T	2.2K 1/4W [M]
R601	ERDS2TJ102T	1K 1/4W [M]	R649	ERD25FVJ151T	150 1/4W [M]	R725	ERDS2TJ102T	1K 1/4W [M]	R970	ERDS2TJ102T	1K 1/4W [M]
R602	ERDS2TJ102T	1K 1/4W [M]	R650	ERD25FVJ151T	150 1/4W [M]	R726	ERDS1FVJ471T	470 1/2W△ [M]	R971	ERDS2TJ122T	1.2K 1/4W [M]
R603	ERDS2TJ102T	1K 1/4W [M]	R652	ERD25FVJ4R7T	4.7 1/4W [M]	R731	ERD25FVJ100T	10 1/4W [M]	R972	ERDS2TJ152T	1.5K 1/4W [M]
R604	ERDS2TJ102T	1K 1/4W [M]	R653	ERDS2TJ682T	6.8K 1/4W [M]	R732	ERDS2TJ153T	15K 1/4W [M]	R973	ERDS2TJ182T	1.8K 1/4W [M]
R605	ERDS2TJ392T	3.9K 1/4W [M]	R654	ERDS2TJ682T	6.8K 1/4W [M]	R733	ERDS2TJ123T	12K 1/4W [M]	R974	ERDS2TJ222T	2.2K 1/4W [M]
R606	ERDS2TJ392T	3.9K 1/4W [M]	R656	ERDS2TJ681T	680 1/4W [M]	R734	ERDS2TJ103T	10K 1/4W [M]	R1001	ERDS2TJ223T	22K 1/4W [M]
R607	ERDS2TJ223T	22K 1/4W [M]	R657	ERDS2TJ333T	33K 1/4W [M]	R735	ERDS2TJ103T	10K 1/4W [M]	R1002	ERDS2TJ223T	22K 1/4W [M]
R608	ERDS2TJ223T	22K 1/4W [M]	R658	ERDS2TJ333T	33K 1/4W [M]	R739	ERD25FVJ180T	18 1/4W [M]	R1003	ERDS2TJ102T	1K 1/4W [M]
R609	ERDS2TJ222T	2.2K 1/4W [M]	R659	ERDS2TJ183T	18K 1/4W [M]	R740	ERDS2TJ393T	39K 1/4W [M]	R1004	ERDS2TJ102T	1K 1/4W [M]
R610	ERDS2TJ222T	2.2K 1/4W [M]	R660	ERDS2TJ224T	220K 1/4W [M]	R742	ERDS2TJ393T	39K 1/4W [M]	R1005	ERDS2TJ203T	20K 1/4W [M]
R611	ERDS2TJ222T	2.2K 1/4W [M]	R661	ERDS2TJ102T	1K 1/4W [M]	R743	ERDS2TJ183T	18K 1/4W [M]	R1007	ERDS2TJ473T	47K 1/4W [M]
R612	ERDS2TJ222T	2.2K 1/4W [M]	R662	ERDS2TJ102T	1K 1/4W [M]	R751	ERC12ZGK335D	3.3M 1/2W△ [M]	R1008	ERDS2TJ473T	47K 1/4W [M]
R613	ERDS2TJ182T	1.8K 1/4W [M]	R663	ERDS2TJ102T	1K 1/4W [M]	R754	ERDS2TJ102T	1K 1/4W [M]	R1009	ERDS2TJ332T	3.3K 1/4W [M]
R614	ERDS2TJ182T	1.8K 1/4W [M]	R665	ERDS2TJ472T	4.7K 1/4W [M]	R901	ERDS2TJ102T	1K 1/4W [M]	R1010	ERDS2TJ332T	3.3K 1/4W [M]
R615	ERDS2TJ182T	1.8K 1/4W [M]	R666	ERDS2TJ472T	4.7K 1/4W [M]	R906	ERDS2TJ182T	1.8K 1/4W [M]	R1011	ERDS2TJ332T	3.3K 1/4W [M]
R616	ERDS2TJ182T	1.8K 1/4W [M]	R681	ERDS2TJ270T	27 1/4W [M]	R907	ERDS2TJ104T	100K 1/4W [M]	R1012	ERDS2TJ102T	1K 1/4W [M]
R617	ERDS2TJ563T	56K 1/4W [M]	R682	ERDS2TJ270T	27 1/4W [M]	R908	ERDS2TJ104T	100K 1/4W [M]	R1051	ERDS2TJ393T	39K 1/4W [M]
R618	ERDS2TJ563T	56K 1/4W [M]	R683	ERDS2TJ270T	27 1/4W [M]	R909	ERDS2TJ104T	100K 1/4W [M]	R1052	ERDS2TJ105T	1M 1/4W [M]

Ref No	Part No.	Values & Remarks	Ref No	Part No.	Values & Remarks	Ref No	Part No.	Values & Remarks	Ref No	Part No.	Values & Remarks
R1053	ERDS2TJ102T	1K 1/4W [M]	C133	ECBT1H150JC5	15P 50V [M]	C455	ECBT1H102KB5	1000P 50V [M]	C558	ECBT1E103ZF5	0.01 25V [M]
R1055	ERDS2TJ473T	47K 1/4W [M]	C134	ECBT1H180JC5	18P 50V [M]	C456	ECBT1H102KB5	1000P 50V [M]	C559	ECEA1CKA100B	10 16V [M]
R1056	ERDS2TJ473T	47K 1/4W [M]	C137	ECBT1H271KB5	270P 50V [M]	C457	ECA1CM330B	33 16V [M]	C560	ECEA1CKA100B	10 16V [M]
R1061	ERDS2TJ222T	2.2K 1/4W [M]	C138	ECBT1H271KB5	270P 50V [M]	C458	ECA1CM330B	33 16V [M]	C561	ECA1HM3R3B	3.3 50V [M]
			C141	ECEA1HKA010B	1 50V [M]	C459	ECFR1E223KR	0.022 25V [M]	C562	ECA1HM3R3B	3.3 50V [M]
	CAPACITORS		C142	ECEA1HKA010B	1 50V [M]	C460	ECFR1E223KR	0.022 25V [M]	C563	ECBT1H104ZF5	0.1 50V [M]
C1	ECBT1H5R6KC5	5.6P 50V [M]	C143	ECEA1HKA010B	1 50V [M]	C461	ECFR1E682KR	6800P 25V [M]	C601	ECEA1CKA220B	22 16V [M]
C2	RCBS1H102KBY	1000P 50V [M]	C144	ECEA1HKA010B	1 50V [M]	C462	ECFR1E682KR	6800P 25V [M]	C602	ECEA1CKA220B	22 16V [M]
C3	ECBT1H2R2KC5	2.2P 50V [M]	C145	ECBT1H220JC5	22P 50V [M]	C463	ECEA1VKA4R7B	4.7 10V [M]	C603	ECEA1VKA4R7B	4.7 10V [M]
C4	ECBT1H181KB5	180P 50V [M]	C146	ECBT1H331KB5	330P 50V [M]	C464	ECEA1VKA4R7B	4.7 10V [M]	C604	ECEA1VKA4R7B	4.7 10V [M]
C5	ECBT1H5R6KC5	5.6P 50V [M]	C147	ECBT1H102KB5	1000P50V [M]	C465	ECBT1E103ZF5	0.01 25V [M]	C605	ECA1JM330B	33 6.3V[M]
C6	ECBT1H3R3KC5	3.3P 50V [M]	C148	ECBT1C103NS5	0.01 16V [M]	C466	ECBT1E103ZF5	0.01 25V [M]	C606	ECA1JM330B	33 6.3V[M]
C7	ECBT1H4R7KC5	4.7P 50V [M]	C149	ECBT1C103NS5	0.01 16V [M]	C503	ECEA0JKA101B	100 6.3V[M]	C607	ECA1JM330B	33 6.3V[M]
C8	ECBT1H3R3KC5	3.3P 50V [M]	C150	ECBT1H104ZF5	0.1 50V [M]	C504	ECEA0JKA101B	100 6.3V[M]	C608	ECA1JM330B	33 6.3V[M]
C9	ECBT1H2R2KC5	2.2P 50V [M]	C172	ECBT1H331KB5	330P 50V [M]	C505	ECFR1C104MR	0.1 16V [M]	C609	ECCR1H120KC5	12P 50V [M]
C10	ECBT1H180JC5	18P 50V [M]	C173	ECEA1CKA220B	22 16V [M]	C506	ECFR1C104MR	0.1 16V [M]	C610	ECCR1H120KC5	12P 50V [M]
C11	RCBS1H102KBY	1000P 50V [M]	C174	ECEA1CKA100B	10 16V [M]	C511	ECEA1HKA3R3B	3.3 50V [M]	C611	ECCR1H120KC5	12P 50V [M]
C101	ECBT1C103NS5	0.01 16V [M]	C175	ECBT1C103NS5	0.01 16V [M]	C512	ECEA1HKA3R3B	3.3 50V [M]	C612	ECCR1H120KC5	12P 50V [M]
C103	ECBT1C103NS5	0.01 16V [M]	C196	ECBT1H102KB5	1000P 50V [M]	C513	ECBT1H150J5	15P 50V [M]	C613	ECBT1H821KB5	820P 50V [M]
C104	ECBT1H102KB5	1000P 50V [M]	C330	ECBT1H470J5	47P 50V [M]	C514	ECBT1H150J5	15P 50V [M]	C614	ECBT1H821KB5	820P 50V [M]
C105	ECBT1H102KB5	1000P 50V [M]	C331	ECBT1H470J5	47P 50V [M]	C515	ECBT1H221KB5	220P 50V [M]	C615	ECBT1H821KB5	820P 50V [M]
C106	ECBT1C103NS5	0.01 16V [M]	C351	ECEA1CU101B	100 16V [M]	C516	ECBT1H221KB5	220P 50V [M]	C616	ECBT1H821KB5	820P 50V [M]
C107	ECBT1H473ZF5	0.047 50V [M]	C352	ECEA1CU101B	100 16V [M]	C517	ECBT1H330J5	33P 50V [M]	C617	ECQV1H473JZ3	0.047 50V [M]
C108	ECBT1H8R2KC5	8.2P 50V [M]	C354	ECBT1E103ZF5	0.01 25V [M]	C518	ECBT1H330J5	33P 50V [M]	C618	ECQV1H473JZ3	0.047 50V [M]
C109	ECBT1C103NS5	0.01 16V [M]	C355	ECBT1E103ZF5	0.01 25V [M]	C519	ECEA1VKA4R7B	4.7 10V [M]	C619	ECQV1H473JZ3	0.047 50V [M]
C110	ECBT1C103NS5	0.01 16V [M]	C357	ECBT1E103ZF5	0.01 25V [M]	C520	ECEA1VKA4R7B	4.7 10V [M]	C620	ECQV1H473JZ3	0.047 50V [M]
C111	ECEA1EKA4R7B	4.7 25V [M]	C358	ECBT1E103ZF5	0.01 25V [M]	C521	ECEA1VKA4R7B	4.7 10V [M]	C621	ECEA2AU100B	10 100V[M]
C112	ECBT1C103NS5	0.01 16V [M]	C373	ECA1EM470B	47 25V [M]	C522	ECEA1VKA4R7B	4.7 10V [M]	C622	ECEA1HN010SB	1 50V [M]
C113	ECBT1H102KB5	1000P 50V [M]	C374	ECA1EM470B	47 25V [M]	C523	ECFR1E123KR	0.012 25V [M]	C623	ECA1HM470B	47 50V [M]
C114	ECEA1HKA3R3B	3.3 50V [M]	C401	ECEA1VKA4R7B	4.7 10V [M]	C524	ECFR1E123KR	0.012 25V [M]	C624	ECEA2AN2R2SB	2.2 100V[M]
C115	ECEA1EKA4R7B	4.7 25V [M]	C402	ECEA1VKA4R7B	4.7 10V [M]	C525	ECQV1H683JM3	0.068 50V [M]	C625	ECEA1HN100SB	10 50V [M]
C116	ECBT1C822MS5	8200P 16V [M]	C403	ECBT1E103ZF5	0.01 25V [M]	C526	ECQV1H683JM3	0.068 50V [M]	C626	ECEA1HN100SB	10 50V [M]
C117	ECQB1H821JF3	820P 50V [M]	C404	ECBT1E103ZF5	0.01 25V [M]	C527	ECBT1C562KR5	5600P16V [M]	C635	ECEA1VKA4R7B	4.7 10V [M]
C118	ECFR1E183KR	0.018 25V [M]	C405	ECBT1H101KB5	100P 50V [M]	C528	ECBT1C562KR5	5600P16V [M]	C636	ECEA1HN010SB	1 50V [M]
C119	ECFR1E183KR	0.018 25V [M]	C406	ECBT1H101KB5	100P 50V [M]	C529	ECQB1H273JF3	0.027 50V [M]	C685	ECBT1E103ZF5	0.01 25V [M]
C120	ECEA1HKA010B	1 50V [M]	C409	ECEA1CKA220B	22 16V [M]	C530	ECQB1H273JF3	0.027 50V [M]	C701	ECBT1E103ZF5	0.01 25V [M]
C121	ECEA1HKA010B	1 50V [M]	C410	ECEA1CKA220B	22 16V [M]	C531	ECBT1E103ZF5	0.01 25V [M]	C702	ECQE2104KF3	0.1 250V[M]
C122	ECEA1HKA2R2B	2.2 50V [M]	C411	ECBT1H101KB5	100P 50V [M]	C532	ECBT1E103ZF5	0.01 25V [M]	C703	ECOS1JP682CB	6800P 63V [M]
C123	ECEA1HKA010B	1 50V [M]	C412	ECBT1H101KB5	100P 50V [M]	C533	ECEA1CKA220B	22 16V [M]	C704	ECOS1JP682CB	6800P 63V [M]
C124	ECBT1H102KB5	1000P 50V [M]	C415	ECBT1E103ZF5	0.01 25V [M]	C534	ECEA1CKA220B	22 16V [M]	C705	ECOS1VP562BB	5600P 10V [M]
C125	ECBT1H150JC5	15P 50V [M]	C416	ECBT1E103ZF5	0.01 25V [M]	C536	ECBT1E103ZF5	0.01 25V [M]	C706	ECOS1VP562BB	5600P 10V [M]
C126	ECBT1H104ZF5	0.1 50V [M]	C431	ECEA1CKA100B	10 16V [M]	C551	ECEA1HKA3R3B	3.3 50V [M]	C707	ECA1VM101B	100 10V [M]
C127	ECEA1CKA220B	22 16V [M]	C432	ECEA1CKA100B	10 16V [M]	C552	ECEA1HKA3R3B	3.3 50V [M]	C708	ECCR1H103ZF5	0.01 50V [M]
C128	ECBT1C103NS5	0.01 16V [M]	C440	ECBT1E103ZF5	0.01 25V [M]	C553	ECBT1H101KB5	100P 50V [M]	C709	ECA1CM330B	33 16V [M]
C129	ECEA0JKA101B	100 6.3V[M]	C451	ECEA1VKA4R7B	4.7 10V [M]	C554	ECBT1H101KB5	100P 50V [M]	C710	ECBT1E103ZF5	0.01 25V [M]
C130	ECEA0JKA101B	100 6.3V[M]	C452	ECEA1VKA4R7B	4.7 10V [M]	C555	ECBT1H221KB5	220P 50V [M]	C711	ECCR1H103ZF5	0.01 50V [M]
C131	ECBT1C103NS5	0.01 16V [M]	C453	ECBT1H101KB5	100P 50V [M]	C556	ECBT1H221KB5	220P 50V [M]	C712	ECA1HM100B	10 50V [M]
C132	ECBT1H102KB5	1000P 50V [M]	C454	ECBT1H101KB5	100P 50V [M]	C557	ECBT1E103ZF5	0.01 25V [M]	C713	ECCR1H103ZF5	0.01 50V [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
C714	ECA1EM470B	47 25V [M]	C914	ECEA1VKA100B	10 10V [M]	C1014	ECEA0JU221B	220 6.3V[M]	C1036	ECBT1H681KB5	680P 50V [M]
C715	ECEA1CU101B	100 16V [M]	C916	ECEA1HKA010B	1 50V [M]	C1015	ECQV1H104JM3	0.1 50V [M]	C1037	ECBT1H101KB5	100P 50V [M]
C721	ECQE2104KF3	0.1 250V [M]	C919	ECBT1E103ZF5	0.01 25V [M]	C1016	ECQV1H104JM3	0.1 50V [M]	C1038	ECBT1H101KB5	100P 50V [M]
C731	ECKR1H103ZF5	0.01 50V [M]	C920	ECEA1HKA010B	1 50V [M]	C1017	ECA1HMR47B	0.47 50V [M]	C1039	ECEA1CU101B	100 16V [M]
C732	ECKR1H103ZF5	0.01 50V [M]	C935	ECBT1H101KB5	100P 50V [M]	C1018	ECEA1VKA4R7B	4.7 10V [M]	C1040	ECEA1CKA100B	10 16V [M]
C751	ECKWNS102MBM	1000P 400V [M]	C939	ECBT1H101KB5	100P 50V [M]	C1019	ECA1HMR47B	0.4 70V [M]	C1041	ECBT1E103ZF5	0.01 25V [M]
C752	ECKR1H103ZF5	0.01 50V [M]	C952	ECBT1H101KB5	100P 50V [M]	C1020	ECEA1VKA4R7B	4.7 10V [M]	C1051	ECA1HM2R2B	2.2 50V [M]
C753	ECA1EM102B	1000 25V [M]	C953	ECBT1H101KB5	100P 50V [M]	C1021	ECEA1HKA15B	0.15 50V [M]	C1052	ECA1HMR33B	0.33 50V [M]
C754	ECBT1H103ZF5	0.01 50V [M]	C955	ECBT1H101KB5	100P 50V [M]	C1022	ECA1HM3R3B	3.3 50V [M]	C1053	ECA1HM3R3B	3.3 50V [M]
C755	ECA1CM470B	47 16V [M]	C956	ECBT1H101KB5	100P 50V [M]	C1023	ECQV1H154JZ3	0.15 50V [M]	C1054	ECEA0JU221B	220 6.3V[M]
C757	ECA1CM100B	10 16V [M]	C1001	ECA1HM010B	1 50V [M]	C1024	ECQV1H154JZ3	0.15 50V [M]	C1055	ECA1HMR47B	0.47 50V [M]
C901	ECA0JM102B	1000 6.3V [M]	C1002	ECA1HM010B	1 50V [M]	C1025	ECA1HM3R3B	3.3 50V [M]	C1056	ECQV1H823JZ3	0.082 50V [M]
C902	ECBT1E223ZF5	0.022 25V [M]	C1003	ECA1HM3R3B	3.3 50V [M]	C1026	ECEA1HKA15B	0.15 50V [M]	C1057	ECFR1E332KR	3300P 25V [M]
C903	ECBT1E103ZF5	0.01 25V [M]	C1004	ECA1HM3R3B	3.3 50V [M]	C1027	ECEA1VKA4R7B	4.7 10V [M]	C1058	ECQV1H823JZ3	0.082 50V [M]
C904	ECA0JM102B	1000 6.3V [M]	C1005	ECA1HM010B	1 50V [M]	C1028	ECA1HMR47B	0.47 50V [M]	C1059	ECEA1CU101B	100 16V [M]
C906	ECEA0JKA101B	100 6.3V [M]	C1007	ECFR1E223KR	0.022 25V [M]	C1029	ECEA1VKA4R7B	4.7 10V [M]	C1060	ECBT1E223ZF5	0.022 25V [M]
C908	ECBT1E103ZF5	0.01 25V [M]	C1008	ECFR1E473KR	0.047 25V [M]	C1030	ECA1HMR47B	0.47 50V [M]	C1062	ECBT1E223ZF5	0.022 25V [M]
C909	ECEA1HKA220B	22 50V [M]	C1009	ECEA0JU221B	220 6.3V[M]	C1031	ECQV1H104JM3	0.1 50V [M]	C1063	ECEA1CU101B	100 16V [M]
C910	ECEA1HKA220B	22 50V [M]	C1010	ECEA1CKA100B	10 16V [M]	C1032	ECQV1H104JM3	0.1 50V [M]	C1065	ECBT1H681KB5	680P 50V [M]
C911	ECEA1HKA220B	22 50V [M]	C1011	ECEA1CKA100B	10 16V [M]	C1033	ECA1EM470B	47 25V [M]	C1067	ECBT1C152KR5	1500P 16V [M]
C912	ECEA1HKA220B	22 50V [M]	C1012	ECEA1CKA100B	10 16V [M]	C1034	ECQV1H474JM3	0.47 50V [M]	C1068	ECBT1C152KR5	1500P 16V [M]
C913	ECEA1VKA100B	10 10V [M]	C1013	ECEA1CKA100B	10 16V [M]	C1035	ECBT1H681KB5	680P 50V [M]			

■ Packaging (Refer to page 36 for the Parts List.)

P1 (SPSD152)	: ACCESSORY BOX
A1 (EUR644347)	: REMOTE CONTROL UNIT
A2 (RSA0010)	: AM LOOP ANT
A3 (SJA172)	: AC CORD
A4 (RFKSEX310PK ... P)	: INSTRUCTION MANUAL ASS'Y
A5 (RFKSEX310PCK .. PC)	: INSTRUCTION MANUAL ASS'Y
A6 (RSA0006 ... P)	: FM ANT

